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ABSTRACT

Papers from a conference on cartography in geolinguistics include: "The Political Importance of Visualisation of Language Contact" (Yvo J. D. Peeters); "Some Considerations on People and Boundaries" (Guy Heraud); "Geolinguistic Developments and Cartographic Problems" (Colin H. Williams, John E. Ambrose); "A Conceptual Home for Geolinguistics: Implications for Language Mapping in South Africa" (I. J. van der Merwe); "Methods and Possibilities for Mapping by Onomasticians" (Ferjan Ormeling); "'Easy Geolinguists' and Cartographers" (Roland Breton); "Regionalism and Ethnic Distribution in Today's Hungary" (Jozsef Toth); and "Putting Regional Identity on the Language Map: Some Reflections on Recent Developments in South Africa" (Karel Prinsloo). A number of maps and data tables are included. Information about the European Centre for Ethnolinguistic Cartography (Brussels, Belgium) is also included. (MSE)

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THE CARTOGRAPHIC REPRESENTATION OF LINGUISTIC DATA.

Edited by
Yvo J.D. Peeters and
Colin H. Williams

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DISCUSSION PAPERS IN GEOLINGUISTICS

Nos. 19 - 21

Division of Geography
Staffordshire University

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The Cartographic Representation of Linguistic Data

Papers from a geolinguistic seminar held at Le Foyer Européen de la Culture, Gex/Le Pailly, 10th-13th September, 1992.

C H Williams:	Preface.
Y J D Peeters:	The Political Importance of Visualisation of Language Contact.
G Héraud:	Some Considerations on People and Boundaries.
C H Williams and J Ambrose:	Geolinguistic Developments and Cartographic Problems.
I J van der Merwe:	A Conceptual Home for Geolinguistics: Implications for Language Mapping in South Africa.
F J Ormeling:	Methods and Possibilities for Mapping by Onomasticians.
R J Breton:	'Easy Geolinguistics' and Cartographers.
J Tóth:	Regionalism and Ethnic Distribution in Today's Hungary.
K P Prinsloo:	Putting Regional Identity on the Language Map: Some Reflections on Recent Developments in South Africa.
C H Williams	Conclusion.

Presentation of E.C.E.C.

PREFACE

Colin H Williams

Chairman, E.C.E.C.

The papers included in this special issue of Discussion Papers in Geolinguistics represent the tabled contributions of several participants at the Scientific Workshop on the Cartographic Representation of Linguistic Data, 10 - 13 September 1992. The seminar was organised by officers of th ECEC, principally its General Secretary, Yvo Peeters, and was graciously hosted by Mr G Dimitrof of the European Cultural Centre at the spectacular location of Le Pailly overlooking Lake Geneva. It was a most stimulating and fruitful meeting bringing together academics and practitioners from many disciplines and from Western and Central Europe and Southern Africa.

The meeting was followed by an 'Hommage a Aldo Dami' (1898-1977) who pioneered the academic study of several of the inter-cultural and trans-frontier issues discussed within the developing field of Ethnolinguistic Cartography. This inter-change between diplomats, academics and politicians was a particularly forceful reminder that in a continent still riven by ethnic, linguistic and socio-political conflict, there is a more than ever acute need for sustained, accurate recording of population characteristics. The personal observations and reflections of Professor Aldo Dami's son, Judge Roger Dami, were a personal reminder of the wit and integrity demonstrated by his father in handling complex academic and political issues. We all need to relearn that age-old lesson that we each have one life to live, one planet to sustain us and often only limited opportunity to benefit others by our professional work. It is my conviction that ethno-linguistic cartography can be a useful servant in the cause of peace, but an all too powerful master in the pursuit of war and conquest.

The war of Yugoslav succession is ample testimony to the ambiguity and dualism of mapped reality. In a post-modern world it is more imperative than ever that accurate data be made available in mapped form, but equally important that its evaluation and implications be fully understood by both map producers and map users.

The editors wish to acknowledge the technical and secretarial assistance of Dr John Ambrose, Mr Owen Tucker, Mrs Kerry Summerfield and Ms Margaret Miller, all of Staffordshire University, in the preparation of this document.

INTRODUCTION

THE POLITICAL IMPORTANCE OF THE VISUALISATION OF LANGUAGE CONTACT

Yvo J D Peeters

General Secretary ECEC

Cartographers are at the same time both powerful and feeble scientists. Poweful because through their mapping work they create lasting documents which visualise for a large public various aspects of a living society, such as language and ethnic identity, feeble in the sense that once the map is produced they lose control of the use that is made of it in politics and sometimes also in warfare.

Indeed aren't the best set of ethnolinguistic maps ever made of the European Continent, not those produced by the German Wehrmacht in 1940 and those by the American Intelligence Agency in 1944? On both sides, they served their users well.

Another sympton of "Map-power" is the ominous prohibition of maps of all kinds by totalitarian governments, be they left or right-wing. The confiscation of simple tourist and road maps at border posts of those countries would seem ludicrous, if it weren't at the same time so serious an expression of paranoia.

The total deadlock in which the first major venture of ECEC, the drafting of the "Lesser Used Language Map of the European Community" has ended up, because of obstruction by one Member State, seemed to belong to a bygone age, until it really happened.

Unfortunatley it isn't and three years of fundamental work lies idle in our drawers, waiting for the political green light.

As a child, everyone doubtless has gone through the thrilling experience of being introduced into geography and maps, of searching for his/her native village or the "Heimat", as if the mere fact of having encountered it on the map was final proof that it really existed.

Can one imagine a greater blow to any "place's" reputation than the grave accusation that "it doesn't even figure on the best maps"?

That, however is the fate of many so-called "minorities" and other stateless peoples.

Indeed, maps, particularly ethnolinguistic maps, are very expensive to produce. Cartographic knowledge and expertise is located in Universities, Academies and distinguished Geographic Societies. Those are rarely within reach of the above mentioned groups. Who will provide the money and undertake the necessary ethnolinguistic research, mapping work and printing for the Kurds, the Vlachs, the Occitans, when it is even difficult for small states to live up to the justified expectations of their local academe? Ethnolinguistic maps thus also quite often reflect the vision of the powerful, the victors of the many conflicts in history. Nonobstant everyone's claim to scientific honesty, the reality of life is sufficient proof that the winner's "dot" on the map is usually bigger than the loser's. Eventually those who lost to a greater extent, may someday disappear completely from our maps and atlases.

For many peoples and minorities, their particular version of the famous "cogito, ergo sum" may sound as "I figure on the map, thus I exist". This is what makes the Ethnolinguistic cartographer's job such a challenging one. He/she can create great expectations as well as equally great deceptions. His/her responsibility thus is tremendous.

The difficulty of language maps - of any maps maybe - is that they represent mainly the fixation of a certain situation on a particular moment in an evolutionary process. The visual result may thus be quite inappropriate and convey false impressions. For sure there are attempts to try to represent diachronic features, but they all come short of giving a true picture.

The other very difficult aspect is relativity of certain facts, eg. how to represent correctly the combination of territorial extension and density of population when dealing with language areas?

Apart from those two fundamental issues there are many others of minor importance - such as how to represent uninhabited areas - which combined, may again completely distort the picture, however well prepared all the material may be. Thus the best intention can produce the worst maps.

Since language is the core element of a people's identity, tampering with language maps can be a very sensitive matter and lead to serious conflicts. On the other hand, the absence of such maps may well induce totally unfounded positions.

It is clear that, contrary to geological, physical, even political maps, no language map will ever satisfy all users. A language map cannot but be controversial because of the inherent conditional element. Depending on the viewpoint of the user a language map should represent the situation as it was implied: the best for a particular language as it is (for those in power) as it should be (for the oppressed) or as it could be (for the realists), etc...

It is clear that putting all this on one map is impossible. It may thus be considered a necessity to have for each language or each area, or each period a set of maps which together give the most complete picture, instead of a single map.

Whatever approach one takes, it seems now more and more evident, also at an intergovernmental level, that ethnolinguistic maps are an important factor in diplomacy. This recogition was concretised in the relevant sections of the recent Helsinki Documents.

This breakthrough also means a new challenge for ethnolinguistic cartographers and geographers. They might well soon be asked to accompany diplomats and the military in International forces to substantiate the delegates intervention. It is in this perspective that the European Centre for Ethnolinguistic Cartography and its members can and will play its role. The memory of ALDO DAMI, will in those endeavours certainly always be present.

Dr. Yvo J D Peeters
Brussels

SOME CONSIDERATIONS ON PEOPLES AND BOUNDARIES

Guy Héraud
Emeritus Professor University of Pau, France

Boundaries exist in many forms and the field of Political Geography provides an important example of their significance. They are used in this discipline in their "original" sense, meaning "a limit to something". If this implies confrontation, it can be inconvenient to a certain degree. In addition to political boundaries there are also administrative ones. One can also speak of territorial or geographical boundaries. Between "frontiers" *sensu stricta* as boundaries of sovereign states, and administrative borders of municipal cities or provinces there is an important qualitative difference but no conceptual difference: both are limits which give existence to separate entities. Political-administrative limits are the more precise ones. They are often established in an extremely scrupulous manner. States have been known to exchange areas of no more than one square meter. In an equally precise way - even if a more theoretical nature - the limits of maritime territorial demarcation have also been the subject of similar detailed attention.

Linguistic boundaries may be somewhat less precisely demarcated, but certainly more precise than those of cultural areas. These can only be shown in a very general manner, because 'culture' has so many different connotations and implications. As for religious boundaries, the question is whether they still exist. Since religion is becoming less important in society, this type of boundary has lost almost all of its significance.

Natural or geographic boundaries, the clearest ones are those formed by the seashore, on continents as well as around islands. Archipelagoes, however, can pose serious problems in respect of political boundaries. The Greek Islands in the Aegean are a good example, the Greek-Turkish border has nothing "natural' but was derived from a combination of political and consequently linguistic, religious and cultural factors. In Oceania this problem is also very salient.

In the case of rivers, the question of a delta's, arms, thalwegs and other features arise. In the case of mountains it is mostly the watershed line which is taken. This though is not always the highest point and certainly does not always coincide with population patterns, so that in many cases the "watershed line" itself created many minorities. Historical boundaries are maybe those with the least relevance on the ground, but at the same time are those which survive for ages against all odds.

Undoubtedly, economic criteria are the vaguest basis for boundary demarcation. It is extremely difficult, because of the composite nature of economic factors, to trace clear boundaries for economic areas. It is perhaps better to think in terms of "zones of influence', but this concept itself is an imprecise one.

It appears thus, from this brief overview that after all the linguistic boundaries are those which - from village to village - can be traced with the greatest precision. When compared with all the difficulties posed by the previously mentioned criteria for boundary delimitation, linguistic data do not, after all, seem such an impractable basis. Contrary to some preconceptions, they have changed comparatively little over the course of history, in spite of wars, terror and repression. Only organised expulsion and exchange of populations can have a fundamental effect on them.

There is however another major problem with linguistic boundaries. It is not of a geographical nature, but of a philological one. Is there a precise nomenclature of languages? Although this is a subject of much debate, an overview of the existing scientific literature shows that a measure of agreement exists, at least in Europe. The principal areas of dispute are related to Macedonian - Bulgarian, Galician-Portugese, Slovak-Czech, Ladin-Friulian, Faroese -Islandic and eventually Piemontese as distinct from Italian. One will observe that these problems are all situated inside language families (German, Romanic, Slav) and that between these families there is an enormous chasm. This eases the task of constructing the language-nomenclature of Europe and thus also the language areas and their boundaries. At the same time one has constructed a basic ethnic map, since the concept "ethnie", as derived from the works of M Bologne, Ch. Becquet and F. Fontan, covers "Linguistic Community". I have also noted that the well known geographer R Breton has later on followed the same line.

Over the past five years the most competent colleagues have been brought together by the work of the European Centre for Ethnolinguistic Cartography named after our good friend Professor Aldo Dami. May this initiative be the focus of an ever increasing activity in linguistic and ethnic geography and cartography.

Editorial note

This is an authorized summary of the original French paper, translated by Yvo J D Peeters

GEOLINGUISTIC DEVELOPMENTS AND CARTOGRAPHIC PROBLEMS

Professor Colin H. Williams
and
Dr John E. Ambrose
Division of Geography, Staffordshire University, U.K.

We are delighted and honoured to have been asked to speak at this innovative meeting and wish to thank Dr. Yvo Peeters of the European Centre for Ethnolinguistic Cartography for bringing us together from such diverse backgrounds. We also wish to thank the European Cultural Centre for its hospitality.

The first section of this paper will trace some of the significant developments within the sub-discipline of Geolinguistics, discuss several unresolved issues and anticipate some of the pressing needs that face us now and in the near future. The later section illustrates selected cartographic problems which derive, in part, from issues raised in the earlier discussion.

These are interesting and challenging days for geolinguistic analysis, for not only do we have a greater scholarly and inter-disciplinary interest in these issues than ever before, but greater recognition of the need for accurate cartographic representation, boundary demarcation and the plotting of multi-lingual populations by governments and formal agencies. However, we also know that the actual use of such information for partisan ends can lead to greater control of some people by others and therefore we need constant reminders as to how sanguine we should be in terms of the ultimate use to which our geographic enquiries are put. Later sections of the paper return to this theme.

Our theme this weekend is the cartographic representation of linguistic data. An underlying assumption is the transfer of good ideas and sound methodology from one context to another, and to warn of the several difficulties involved in the development of geolinguistic principles and practices. Clearly this is not the occasion for a detailed overview of the scholarly history of geolinguistics, but it would be remiss of us not to acknowledge the pioneering work of scholars who have contributed enormously to a field which we are still tentatively describing as 'Geolinguistics' rather than as 'Linguistic Geography' or 'Ethnolinguistic Geography'.

Figure 1 traces some sources for Geolinguistic thought and practice from the earlier pioneers such as Vidal de la Blache, through institutional and governmental agencies to contemporary scholars, several of whom are present in this meeting and from whom we hope to learn more about the nuances of language mapping.

The *geo* of geolinguistics reminds us that we are engaged in an holistic pursuit, one which relates language to its widest possible context including the physical/environmental influences which are often the hardest to determine and therefore the most neglected in contemporary research, if not in that undertaken by the nineteenth-century pioneers of cultural studies (Williams, 1992a, p.53-74).

But what is 'geolinguistics'?

The most convenient and comprehensive overview is that provided by Roland Breton in his magisterial survey 'Geolinguistics: Language Dynamics and Ethnolinguistic Cartography ' (1991). Following on from his earlier work (1976), that of Mackey (1973; 1988) and others, Professor Breton proposed the following definition of the scope of Geolinguistics, primarily for the benefit of fellow practitioners in the International Group for Research on geolinguistics, co-ordinated by I.C.R.L.P. at Laval University. Figure 2 briefly summarises his account of the principles and goals of Geolinguistics (Breton, 1991, pp.xvi-xix). Clearly our workshop should take note of all the dimensions noted by Breton but our orientation is essentially pragmatic, seeking to advance the methodological and instrumental use of linguistic data as Breton describes them.

A *sine qua non* of all our discussions must be the centrality of our data: its origin, reliability, utility, applicability and replication. It goes without saying that time and again we will return to this search for accurate data, but once found can we 'let the data speak for themselves'? Or

SOME SOURCES OF GEOLINGUISTICS

1. European Cultural Geographers e.g. de la Blache, Edmont, Fleure, Bowen.
2. European scholars e.g. A Dami, H Kurath, U Weinreich.
3. Dialectologists and compilers of atlases; e.g. P Trudgill.
4. Modernisation and Social Communication Theorists; e.g. Deutsch, Lerner.
5. Behavioural and Contextual Analyses.
6. Institutional Research Centres and Scholarly Organisations e.g. C.I.R.B. (I.C.R.L.P. Laval) The American Society of Geolinguistics (Mario Pei).
7. Government Departments and Research Agencies, e.g. Statistics Canada, Bilingual Districts Advisory Boards. C.I.I.L. Chinese Academy of Social Sciences.
8. Contemporary Geographers and Social Scientists e.g. R. J-L. Breton, W Mackey, H Carter, G McConnell, D. Cartwright, J A Laponce, F J Ormeling.
9. Future developments: - a fully funded European Centre for Ethnolinguistic Cartography; a U.N. Ethnolinguistic Mapping Agency; several continent-wide, or region-specific institutions/agencies/organisations.

Figure 1

The trans-disciplinary nature of Geolinguistics

Summary of the "scientific orientation" of geolinguistic enquiry.

(Freely adapted from the definition by Breton (1991).)

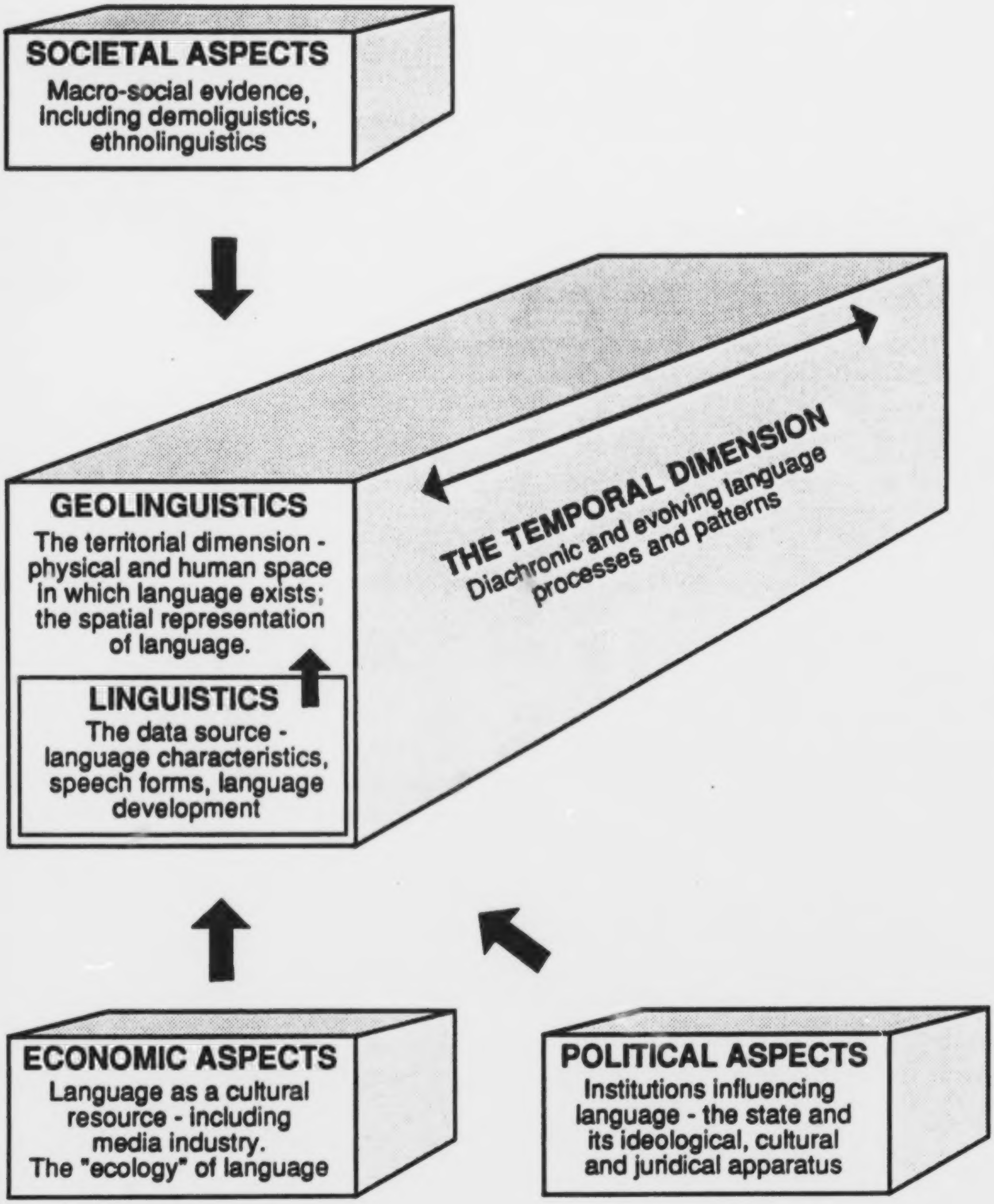

SOCIETAL ASPECTS
Macro-social evidence, including demoliguistics, ethnolinguistics
GEOLINGUISTICS
The territorial dimension - physical and human space in which language exists; the spatial representation of language.
LINGUISTICS
The data source - language characteristics, speech forms, language development
THE TEMPORAL DIMENSION
Diachronic and evolving language processes and patterns
ECONOMIC ASPECTS
Language as a cultural resource - including media industry.
The "ecology" of language
POLITICAL ASPECTS
Institutions influencing language - the state and its ideological, cultural and juridical apparatus

Figure 2

must we perforce, manipulate and transform it cartographically so as to construct a new reality? If so, what is our moral and scientific role as geolinguistics in this transformation process (remembering that in many plurilingual situations some languages, and language groups, are privileged and others excluded from our analyses for a variety of reasons)?

The Cartographic Representation of Linguistic Data:

Conscious that detailed and expert discussion will flow on several of the dynamic aspects of current methodology during the next few days, we want to concentrate our opening remarks on stimulating debate by asking key questions of geolinguistic analysis. They are identified below.

1. With some exceptions, the vast majority of our cartographic representation of linguistic data tends to be unimaginative, largely punctiform, isoline and choropleth symbols being employed in the main, through black and white reproductions.

2. Does this limitation derive from the nature of our data, or an inherent 'conservatism' among Geolinguists? Could the relative paucity of co-workers, or of institutional resources devoted to mapping and representing language, be responsible? If so, do meetings such as this have a heavy responsibility for advancing more imaginative, adventurous and sophisticated work? Is it primarily a matter of financial resources and public outlets or of academic style and custom?

3. What evidence is there that new computer graphic facilities have, or are capable of being utilised in geolinguistics? What is the potential for G.I.S. applications? Where are the good examples to be emulated and applied within other socio-linguistic contexts?

4. A survey of the available evidence will suggest that not only do we have national styles of representing linguistic phenomena cartographically but we also have quite varied standards of representation. Is it time for an international standard code of geolinguistic

representation? If so, who should construct it and what would it involve? Is it an aid to scientific understanding or an expression of geographic hegemony?

5. There is an understandable concentration of maps displaying distributional aspects of data, whether absolute or proportional, but what about other aspects of linguistic and socio-linguistic data? How do we represent complex processes in primarily two-dimensional space? How do we plot language switching processes by interlocutor, by time and by place? Where are our representations of key spaces in multi-ethnic urban areas where, for example, linguistic switching or code conflict takes place in a regular, observable pattern?

6. Most of the best work in Geolinguistics has been done at the state-level with accurate census data. Of late, the international scale has been well presented in the work of Breton (1976, 1990, pp.221-230; 1991, p.107, 132), McConnell (1991), Williams (in press), among many others. Indeed most reputable atlases have one or more plates devoted to global language divisions. Such representation is at best a compromise, for often it exaggerates the spatial extent of state languages and marginalise non-officially recognised tongues. There is a simultaneous need not only to demarcate the extent of language areas, but also their 'intensity' as reflected in numbers of speakers, together with demographic features such as the fertility, gender balance, stability and relative wealth of the speakers. This, in effect, is the mapping of ethnolinguistic vitality.

7. A parallel initiative would be to develop geolinguistic knowledge at the urban or intra-urban level. Much of the literature of urban geography has been concerned with the social fabric of the city and its inhabitants, but despite pioneering efforts in relation to racial and ethnic distribution and conflict, little of this research has been explicitly concerned with establishing the geolinguistic structure of multi-ethnic cities. We thus need extensive research enquiries into the multilingual character of cities in both developed and developing societies. It would be useful to be able to trace the dynamics of such change in Brussels, Montreal, New York and Sydney, let alone the more difficult cases of Mexico City,

Manilla, Kuala Lumpur, Djarkata or Lagos. The mapping of communication flows, educational opportunities, the language of work, of social entertainment, or religious observance, of sport and myriad other speech domains would supplement the valuable, specialist analysis we have of language change and social policy in selected cities such as Montreal (Levine, 1990) or Brussels (Witte and Beardsmore, 1987).

8. Much more difficult, of course, would be exhaustive analysis of rural populations in the developing world, and yet so many of the diachronic processes of change impact upon rural areas. To make matters worse, they are vastly generalised in the available maps which we have. Cultural ecologists and anthropologists, let alone cultural geographers, have often collected valuable data which, with sensitive adaptation, could yield significant cameos of rural geolinguistics. In developed societies, it is the rural-urban continuum which has often framed the geographic scope of so many studies, with 'rural' being equated with 'traditional' and 'urban' with 'modern' or 'post-modern' aspects of change. Good, detailed studies of such processes are generally available; two notable examples being Hindley (1990) and Withers (1988).

9. It is also time to reinvestigate the explanatory power of several key concepts of geolinguistics such as *culture area*, *culture region*, *speech community*, *ecology of language*, *zone of collapse*, *bilingual belt*, *heartland-hinterland*, *contact area* (Williams, 1988, pp.302-05). We are not suggesting that such familiar terms be abandoned (for surely, synonyms would be invented), merely that we should consciously examine how such concepts predispose us to certain types of scholarly analyses, static or dynamic, consensus or conflict, hegemonic or autonomous. Even the dualistic nature of this caution is itself imprisoned within a certain discourse, but it is difficult to avoid the conclusion that in certain areas the familiar repetition of the concepts detailed above is a poor substitute for rigorous, scholarly explication of the processes which underlie essentially geographical patterns.

Once we are convinced that, within all the constraints, we have produced accurate cartographic representations of complex linguistic situations, what then? Where does our interest, and responsiblity, begin and end? For surely it is imperative that we examine how formal government departments and language planning agencies utilise maps, tinker with boundary delimitations, seek to harmonise or exacerbate formal and functional demarcations or geolinguistic phenomena, create sub-sets of populations defined by linguistic and extra-linguisitc criteria which in turn may become net beneficiaries or losers in any reformulated social, educational or language policy in multi-ethnic analysis. The technical, scholarly investigation is essential, but its application is critical as we know from the personal involvement and experiences we all share as both scholars and involved citizens. 'Ethnic cleansing' is too pressing a concept not to take account of the myriad, often subtle forms of discrimination existent in contemporary society.

With the awareness that a second aim of this meeting is to investigate the plight of several minority languages, we have outlined several pertinent questions on territory and language as shown on figure 3. One of the outstanding issues to debate is the effect of 'post modernism' on patterns of communication and interaction, partticularly the distinction between 'individuation' and 'globalization'.

The territorial organisation of society is undergoing profound and radical change. This has obvious effects on our notions of contiguity, homogeneity, the permeable nature of borders, as notions of regional and territorial identification, on 'place-specific' interaction and the like. How do we capture these transforming realities in maps? And what of the non-territorial, or 'deterritorialized' linguistic identities? How are they to be represented?

Elsewhere we, and others, have warned against the possibility of abandoning the role of place and territory too readily in the 'developed' world, rather than seeking to reformulate their influence, and this, it seems, is one of the real changes facing contemporary geolinguistic analysis. How to measure and then map the 'disembedded' character of so much of societal

Key Questions on Territory and Language

- Can an autochthonous culture survive without its own territory?

- Do the advances in technology liberate minority cultures from the confines of tradition, habit, routine behaviour and localism?

- Are there measurable thresholds beyond which it is both uneconomic and untenable to advance the scope and scale of technologocal developments for minority cultures, if the necessary infra-structure is lacking? If so, what are they and to which forms of technology do they apply?

- Need radio and television always follow, rather than precede, comprehensive educational reform where the lesser-used language is recognised within the local system?

- Should language rights be predicated on the territorial or the personality principle of language planning?

- What are the class implications of developing a bureaucratic technical intelligentsia within the minority culture?

- Are elitism, a new professional/technocratic intelligentsia and a burgeoning bureacracy, the necessary progeny of the recent marriage between language activists and the local/central power brokers?

- What role does the European Community, the Council of Europe and the European Bureau for Lesser-Used Languages have in facilitating inter-group networking on the media and cultural reproduction?

Figure 3

interaction in multilingual states and then link such processes to a more flexible framework of territorial hierarchies?

Geolinguistics: a picture of variable progress:

Judged on the basis of our observations so far, the task of the geolinguistic cartographer appears to present a series of challenges, many of which we have not yet been able to meet. The variety of map-making traditions in Europe has already been mentioned. Some of these are the product of differing cartographic styles and conventions, while others, it might be argued, stem from the sheer variety of ethnic inheritance of European states, and from the varying degrees of tension, minority recognition and other locally-prevailing influences. Of course methodological improvements in geolinguistics are continually under way, most recently through computer-supported 'geographical information systems' (G.I.S.); but such improvements appear to have been overtaken by the pace of political and economic events in many areas of modern Europe. It could be argued that the more rapid the pace of such events, the more important it is that universally-recognised and flexible mapping methods are developed.

One response to complexity is to ignore it, or to work with the simplest of geolinguistic data in order to accelerate the mapping process. However, the inhabited world, and not least Europe, is littered with examples of the ill-advised nature of such action; the drawing of simple maps does not settle complex problems. Nor, for that matter, does the drawing of detailed ones, but at least it is more likely to be a vehicle for basis for realistic discussion and, with good fortune, amicable, long-term solutions. While the present paper remains at the level of language taken as a whole, and does not address the task of recording more subtle elements of language distribution such as code shifting and domain-related patterns, it is intended to focus upon the kinds of detailed information which decision makers often see fit to ignore.

If progress in geolinguistic cartography is sometimes slow, to what extent should we blame this on factors such as the shortage of resources, financial or otherwise? For all its troubles, late twentieth-century Europe is still one of the world's economically more favoured areas, and if it is unable to provide the necessary resources for accurate language mapping, there is little hope for many other areas where such tasks are equally imperative. This paper is mainly written with reference to European circumstances, but later material makes brief reference to examples from Central Africa, through the experience of one of our colleagues (Kay, 1967 and 1992).

The implications of 'map making':

The very first, and deceptively simple, question which language-mappers have to address is: what is entailed in the process of map making? Failure to answer it clearly is one of the sources of confusion which prevails, allowing the resultant maps to be ignored, undervalued, sometimes unwittingly or even deliberately abused by those, such as planners and administrators, who might be best-placed to use them to practical effect.

What, then, is the cartographic process? Figure 4 attempts to summarise the role of maps in geolinguistics, and shows two aspects of their use: first, that descriptive functions are a key element in their creation; but that they also possess the potential to be much more than descriptive instruments, allowing the recognition and sometimes the analysis, of processes at work.

Very few individual maps can be expected to accomplish all of the stages shown on the diagram, and in reality stages 1, 2, 3 and 5 are by far the most commonly-encountered. It is possible to argue that these essentially-descriptive stages are what maps are best able to fulfil, and that reliable cartographic description is a key to the success of the delicate process of negotiated peace in areas of ethnolinguistic dicsord, in Europe and elsewhere. As later comments may illustrate, that argument perhaps reveals an incomplete understanding of what geolinguistic mapping is about.

Qualities of effective mapping: flexibility, consistency and attention to detail:

One of our major objectives in geolinguistic mapping should be to employ techniques which can quickly describe changes under way and, where possible, enable us to produce a

The Function of Maps in Geolinguistics

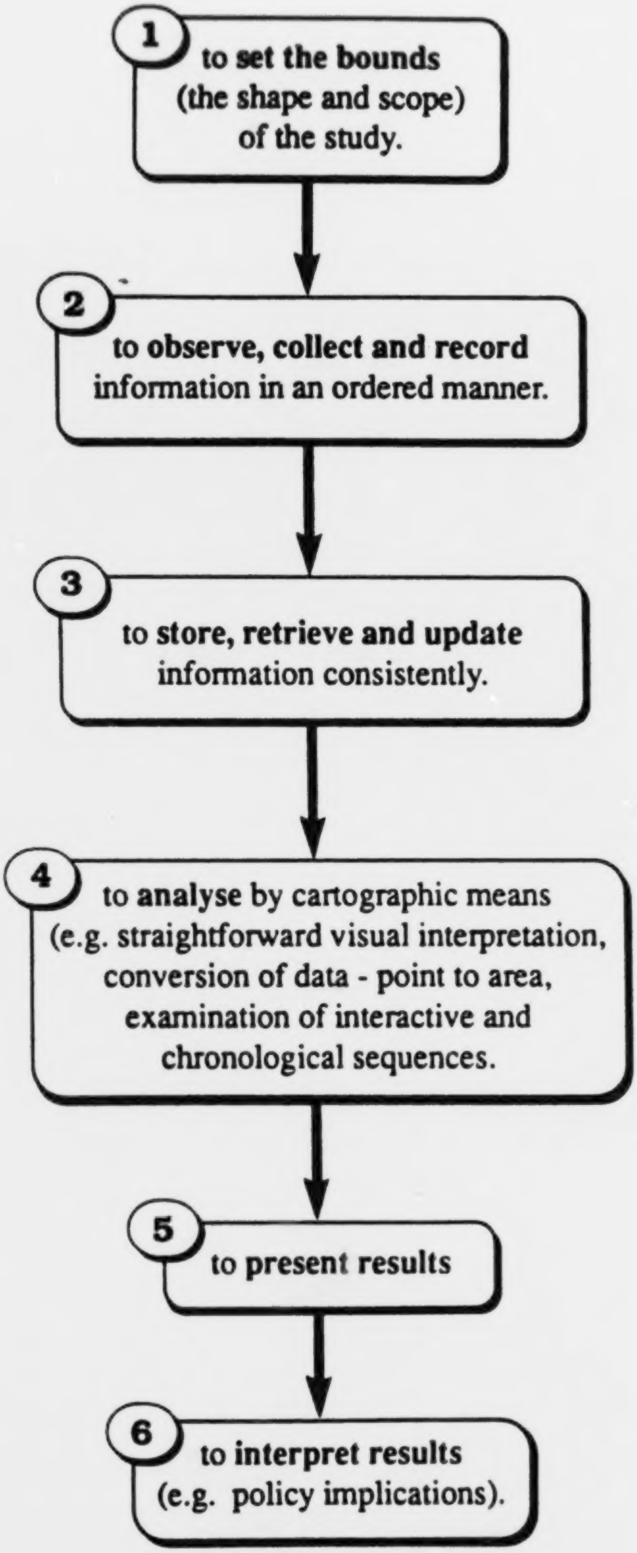

1
to set the bounds (the shape and scope) of the study.
2
to observe, collect and record information in an ordered manner.
3
to store, retrieve and update information consistently.
4
to analyse by cartographic means (e.g. straightforward visual interpretation, conversion of data - point to area, examination of interactive and chronological sequences.
5
to present results
6
to interpret results (e.g. policy implications).

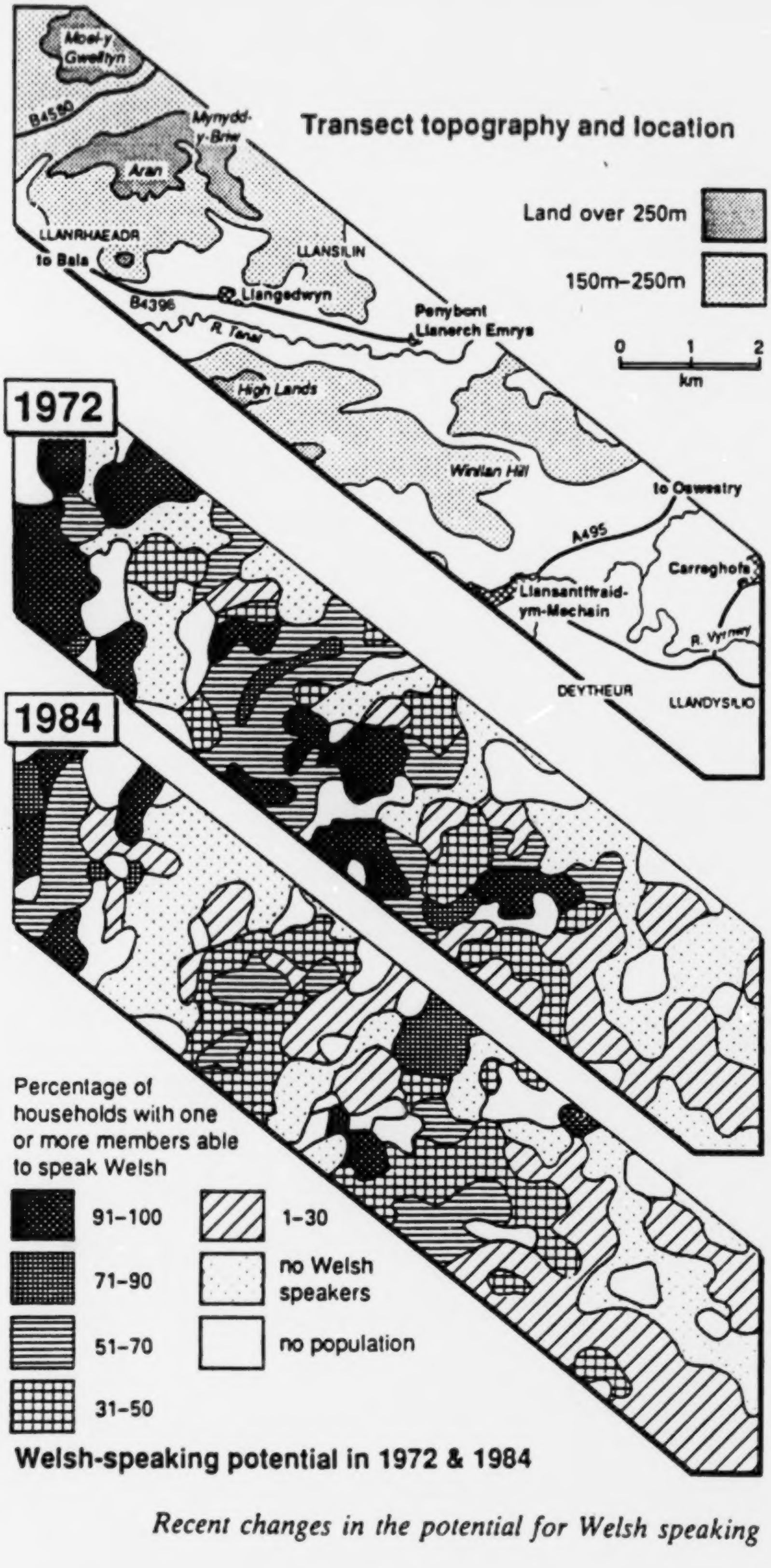
Figure 4

succession of maps which form a consistent time series. Europe's recent political and economic history has emphasised, if that was necessary, that the political and economic developments affecting language balances can be extremely rapid: a few years, occasionally weeks, are sufficient for marked changes to occur. Not all such changes have to be cataclysmic in nature; in the European countryside, for instance, the the effects of changing agriculture, coupled with evolving patterns in the housing market and the journey to work, as well as demographic features such as ageing, are capable of producing severe local challenges to the accuracy of map making.

Figure 5, depicting changes over a twelve-year period in one small locality of the Welsh Borderland, U.K., illustrates the nature of the cartographer's task. Between the original fieldwork in 1972 (Ambrose, 1979) and its repetition in 1984, the local linguistic balance had markedly altered, to the detriment of numbers of Welsh speakers. The maps demand interpretation and illustrate the fact that, under ideal circumstances, geolinguistic maps should be able to pass beyond description and prompt analytical and process-orientated responses, allowing rapid creation and adjustment of local language policies.

The maps in Figure 5, it should be pointed out, are not the product of officially-gathered data such at that which might be obtained from censuses, but were drawn from field surveys. All over Western Europe, similar proceses of change are under way and similar time-consuming work could be expected. However, in view of the labour-intensiveness of task, it may fairly be asked whether it is worthwhile - especially as the carefully-gathered data so easily become out-of-date. Perhaps an involvement with such parochial detail is a distraction from the broader understandings which geolinguistic mapping could bring?

Of course the question poses a false distinction, since a proper understanding rests upon something dear to geographers: the examination of any chosen theme at a wide range of scales. It is a salutory experience, having reached a decision based on language maps at the continental or state level, to use large-scale language maps to take a look at some particular locality in order


Transect topography and location
Moel-y Gwelltyn
B4580
Mynydd-y-Briw
Aran
LLANRHAEADR
to Bala
LLANSILIN
Llangedwyn
B4396
R. Tanat
Penybont Llanerch Emrys
High Lands
Winllan Hill
to Oswestry
A495
Carreghofa
Llansantffraid-ym-Mechain
R. Vyrnwy
DEYTHEUR
LLANDYSILIO
Land over 250m
150m–250m
0
1
2
km
1972
1984
Percentage of households with one or more members able to speak Welsh
91–100
71–90
51–70
31–50
1–30
no Welsh speakers
no population
Welsh-speaking potential in 1972 & 1984

Recent changes in the potential for Welsh speaking

Figure 5

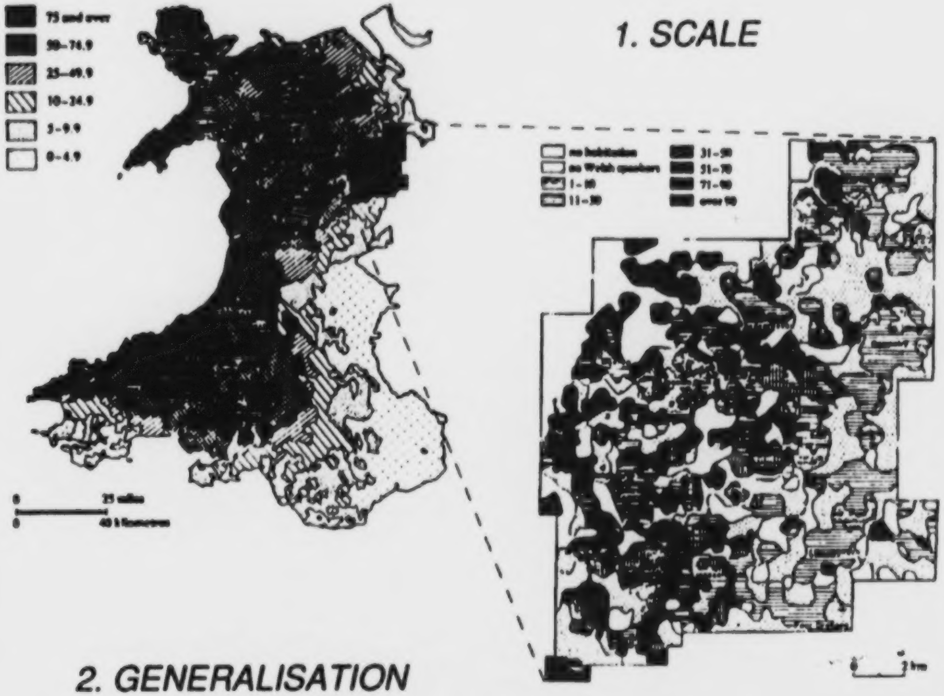
to discover what incomplete or mistaken impressions may have been gained. Even if such local language maps are helpful, however, is it practical to produce them?

At this point the debate about the role of data processing (G.I.S.) in geolinguistics should again be mentioned. In general it is the case that computer-based gathering, storage and processing of mapped information is becoming more detailed and systematic, year by year. Just as importantly, these procedures are becoming more accessible those without particular experience, for example local government officials, who can now co-ordinate their activities and record local processes of change more effectively (Board, 1991). Language data from official sources such as censuses, gathered on a periodic basis, appear to lend themselves well to the creation of linguistic data banks from which maps can be produced at relatively short notice. Furthermore, the possibility of producing detailed linguistic time series, whether generally or just for particular study areas, while it would not in itself enable solutions, would help to reveal the dynamics of local language change, allowing the clearer interpretation of maps at regional and state scales. According to Maguire (1989, p.172), G.I.S. has the potential to stimulate a new, integrated philosophy of data gathering, and in the context of geolinguistics that could imply an increased readiness to consider gathering local data and to relate them to other aspects of changes affecting local study areas.

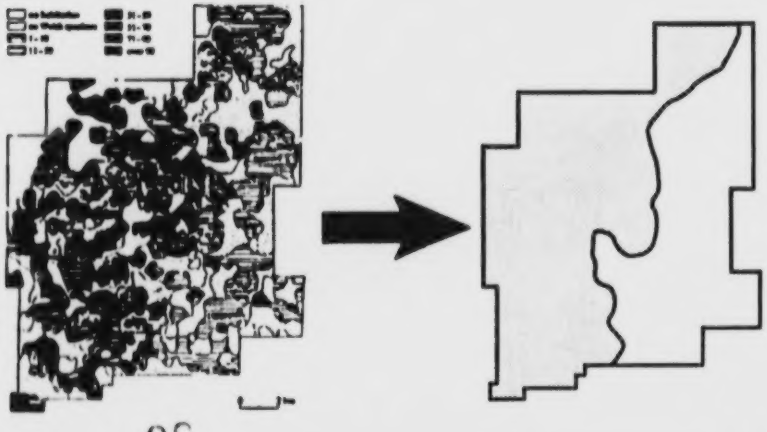
To those who were nurtured in the social sciences, the use of detailed, local maps as the basis for drawing and interpreting more general language patterns ought to seem quite natural. The process of describing the location of ethnolinguistic populations in map form, like most other ordered procedures, seems to be best accomplished by moving from the particular to the general. Broad statements about language distributions and their significance should emerge *after* the close examination of detailed patterns, not before. Self-evident as this may seem, the point is far from universally-acknowledged. Other observers of European language patterns (for example, mass-media, local and central government interests) may be motivated by different priorities, whose implications are that they *begin* with generalisations - and maybe proceed no further in their investigations. It is difficult to escape the suspicion that in some

PROBLEMS AFFECTING THE INTERPRETATION OF LANGUAGE MAPS:

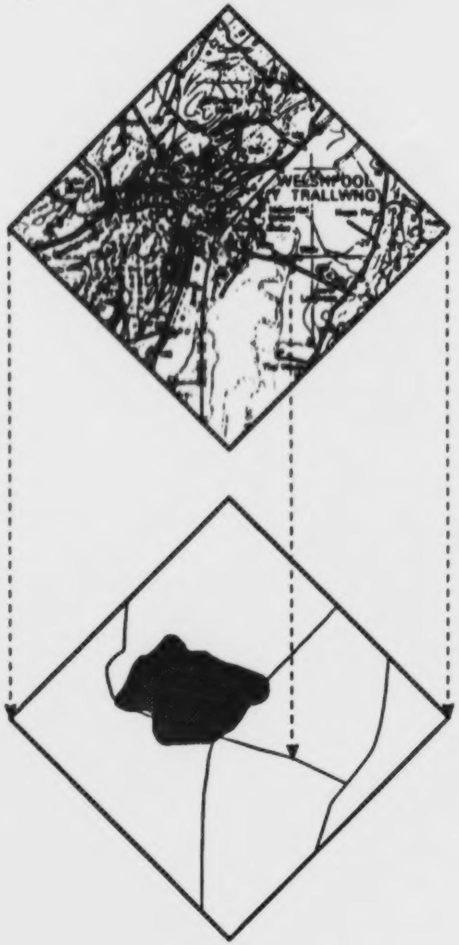
1. SCALE


75 and over
50–74.9
25–49.9
10–24.9
5–9.9
0–4.9
25 miles
40 kilometres
no habitation
no Welsh speakers
1–10
11–30
31–50
51–70
71–90
over 90
2 km

2. GENERALISATION



3. SELECTION OR SCREENING


WELSHPOOL
Y TRALLWNG

cases there is a wish to generalise away the very details which geolinguistic map makers would seek, so that discussion is allowed to remain at an abstract level.

The fallibility of map users, the need for compromise - and some cautionary tales from Central Africa:

It emerges that map makers and map users may have different priorities. Reputable cartographers seek to observe the strictest standards of accuracy; yet they frequently face the need to simplify their material if it is to be usable by others. Potential map users may be highly-sophisticated, in other respects, but unable or perhaps unwilling to increase their cartographic literacy. Figure 6 illustrates some aspects of misunderstanding: first, the failure to realise the importance of scale adjustment; secondly (and related to the scale question), widespread forgetfulness of the significance of generalisation; and thirdly, the failure to appreciate the degree to which mapped information may have been "screened" by the map maker or by those who supplied the original data.

The implications of this are evident: they can be instrumental in creating or changing official attitudes to ethnolinguistic distributions and, ultimately, in forging policy. For example, they can influence the extent to which governments or local administrations choose to take a "bottom-up" approach to development (which might favour the needs of linguistic minority groups) or a "top-down" approach which might serve to reinforce central authority and majority control.

Earlier discussion indicated that there is widespread misunderstanding and under-estimation of the potential role of large-scale, detailed maps as practical tools, even when they are available. Frequently, the carefully-produced evidence gathered by map makers is ignored in favour of more generalised cartographic portrayals. The tendency for this to happen is perhaps even greater in the context of 'less-developed' areas where urgent needs can dispose administrators towards 'broad-brush' approaches. The example we have chosen in order to illustrate this is not specifically linguistic but relates to the more general task of population mapping. It relates to efforts to produce accurate population maps of Zambia and Zimbabwe during the 1960s and early 1970s, as described by Kay (1992). In the context of the highly-complex ethnic and tribal mosaic of Central Africa, this task is not so far removed from the central focus of the present discussion.

In his paper, Kay documents his experience, and that of others, in persuading - or, more accurately, failing to persuade - colonial and subsequent administrations of the strategic and planning value of detailed maps. In some areas of what is now Zimbabwe, his examination of field data from early twentieth-century District Notebooks indicated a meticulous effort, on the part of a few individuals, to understand population distributions in their locality. In general, however, it would be true to say that detailed population mapping in Zambia and Zimbabwe was, even by the mid twentieth century, a process which operated in an atmosphere of inconsistency and trial and error (comparable, it might be contended, with the status of much present-day ehtnolinguistic mapping in areas of the 'developed' world).

Amongst those who sought to remedy these deficiencies was Kay himself, who produced population maps for Zambia (1967, based upon 1963 data) and for Zimbabwe (or Rhodesia, as it still was) in 1971, using data from the 1969 Census. The latter is produced in two forms: a traditional dot map which is a model of its kind, and a second compilation using a base of grid squares. Both of these methods are, of course, well-accepted techniques for geolinguistic representation. Large-scale dot maps are probably unsurpassed in their accuracy of detail and the grid-square approach is particularly valuable as a way of constructing a time series and for use in disputed or controversial areas, since it tends to remove the focus from existing administrative boundaries.

Kay's maps of Zambia, compiled to accompany the Census Report, used the same two techniques, and he was disappointed to find that the grid map was not, in the event , published with the Report. Its potential was not recognised and "its lack of coincidence with readily-recognised and much-used administrative divisions was seen to be a major weakness" (Kay, 1992, p.15). It is perhaps the case that administrators everywhere prefer not to have their prejudices disturbed. The subsequent fate of the Zambian grid map is documented on Figure 7; in accordance with the demands of publishers, its accurate class intervals are supplanted by vague descriptions, and in 1970, the grid-square base, which the publshers thought something of an obstacle to clarity, was generalised into a series of curvilinear shapes which take it one step nearer to abstraction. The response of potential users, at this stage, is predictable: "despite all the efforts which have been made, the map does nothing more than show us what we already know". Devaluation of the mapping process is complete.

Such experiences are not unique; nor are they confined to Africa. The point is that they demonstrate very clearly the possible waste of effort associated with the drawing of highly-detailed maps, geolinguistic or otherwise. In a Europe teeming with new developments, many of the most intractable problems facing map makers are old and clearly-recognisable ones; but we have new technological means at our disposal. Earlier in the discussion we posed a series of comments and questions about cartographic representation, concerning questions such as its frequent lack of imaginativeness, sophistication and varying conventions. If we wish our role to be more effective, we need to remedy as many of these problems as we can, with the role of G.I.S. being amongst the most evidently useful.

The tone of much of our discussion has been self-critical, and it would be an injustice to conclude without reminding ourselves that many fine examples of individual geolinguistic catrography exist. Other contributions to this workshop are evidence enough of that. We may conclude that originality, inventiveness and stylistic elegance are not absent, but to ensure that these qualities are used to their full potential, collaboration and co-ordination should now be our priorities: between map makers, within Europe and with colleagues elsewhere in the world; between cartographic artists and scientists; and between those who make maps and those who use them.

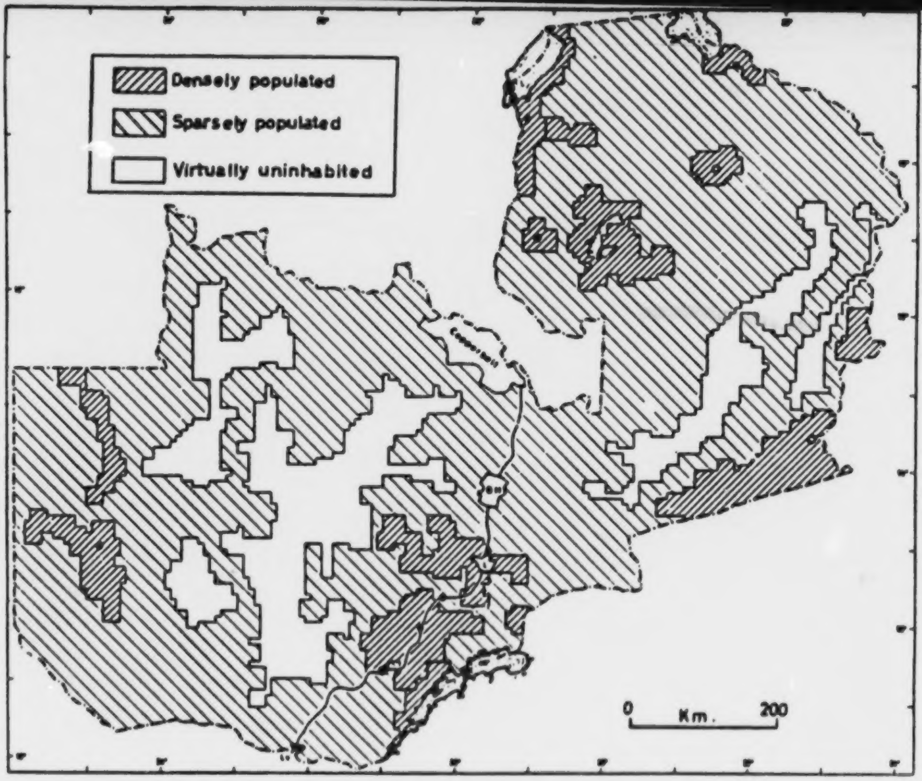

Densely populated
Sparsely populated
Virtually uninhabited
Copperbelt
0 Km. 200

Fig. 22-2. ZAMBIA: POPULATION REGIONS.
(*Source: Institute for Social Research Communication No. 2*, Lusaka, 1967.)

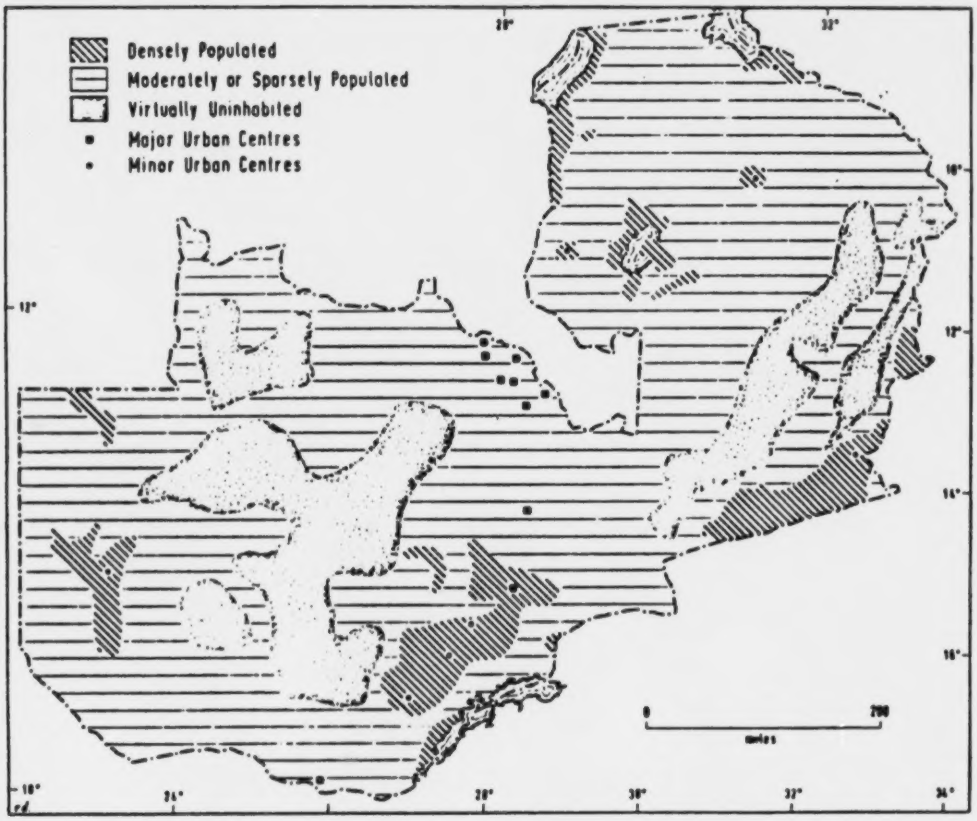

Densely Populated
Moderately or Sparsely Populated
Virtually Uninhabited
Major Urban Centres
Minor Urban Centres
28°
32°
10°
12°
14°
16°
18°
24°
28°
30°
32°
34°
0
200
miles

Figure 7: Stages of map devaluation: Kay's population maps of Zambia, as reproduced in Kay (1967) and Zelinsky et al. (1970)

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A CONCEPTUAL HOME FOR GEOLINGUISTICS: IMPLICATIONS FOR LANGUAGE MAPPING IN SOUTH AFRICA

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Department of Geography, University of Stellenbosch
South Africa

1. INTRODUCTION

The approximately 5 000 languages spoken by the 5,3 billion people on earth influence human life in a variety of ways (Skutnabb-Kangas, 1990:6). In order to determine these influences, it is necessary to clarify the concept of *language*. A lexical definition of language describes it as "the body of words and the methods of combining them for the expression of thought" (Little et al, 1970). However, such a clinical description does not do justice to the range and complexity of language related phenomena. *Linguistics*, being the scientific study of language, tries to fill this gap. This is a relative young academic discipline, having become particularly prominent since the 1960's. Different approaches and accents may be distinguished according to the linguist's focus of interest. The overlapping interest of linguistics with other disciplines has led to several branches of this multidisciplinary subject, i.e. mathematical linguistics, biolinguistics, psycholinguistics, ethnolinguistics, sociolinguistics and *geolinguistics* (Crystal, 1980:212-213). The latter represents an interface between the disciplines Linguistics and Geography and is the focus of this paper in which the following three issues are addressed::

- The theoretical-conceptual niche of geolinguistics.
- The empirical applications of geolinguistics in South Africa.
- The challenges and problems facing language mapping in South Africa.

2. A CONCEPTUAL HOME FOR GEOLINGUISTICS

Language is a mode of communication between individuals of a particular cultural group and therefore adds to our knowledge of cultural and social interaction in a society. Although language is at the core of human communication, they are also recipes for conflict and cohesion. It makes possible the co-operative efforts, the group understandings and shared behavior that distinguishes cultural groups. Language, therefore, is the hallmark of cultural identity and diversity (Fellman et al, 1990:127).

One of the many facets of language is its *spatial* dimension which is interwoven with political, economic, ethnic, religious and other social phenomena, as well as communication networks and the physical environment. One cannot, therefore, fully grasp the complexity of the human mosaic without giving geolinguistics its due (Zelinski and Williams, 1988). A central task for geographers is to understand the making and maintenance of *place* - the varied features, localities, regions, landscapes, shared values and human experiences that make up the earth's surface. A curious gap in the extensive and growing literature on human and cultural geography is the attempt to address directly the role of human speech in the creation of place identify: curious, because without the exchange of words and conveying of ideas there cannot be any human action directed toward preconceived goals (Tuan, 1991:684). If, therefore, a place-space perspective on language is so important, where does it fit within the total framework of science? A few definitions may help to provide clarity on this issue.

Crystal (1980:161) views geographical linguistics as "the study of languages and dialects in terms of their regional distribution". For Breton (1991 : xviii) "geolinguistics is derived from its unique view of languages as existing in space, but primarily in human space rather than physical space, since languages are above all societal phenomena, with all the demographic, economic, historical and political ramifications that this implies." Williams's (1988:2) definition interprets geolinguistics as "a developing branch of human geography which reflects the increasing concern of its parent discipline with social problems, and with devising more appropriate methodologies for the analysis of time-honoured questions of social investigation. Its concern is with the relationship between languages and their physical and human contexts. It may seek among other things to illuminate the socio-spatial context of language use and language choice; to measure language distribution and variety; to identify the demographic characteristics of language groups; to assess the relative practical importance, usefulness and availability of different languages from the economic, psychological, political and cultural standpoints of specific speech milieux; to understand variations in their basic grammatical and lexical structures, and to measure and map their genetic, historical and geographical affiliations and relations. Until we achieve a greater integration of the work of linguists and social scientists, the geographer's major contribution will continue to be that of the synthesiser, emphasizing the application of general social processes of specific places".

Various geographical concepts underlie the geolinguistics approach, i.e. location, space, place, perception, interaction, competition, centrality, regionalism, diffusion, migration, evolution, assimilation, heterogeneity, diversity, segmentation, segregation, social ecology, ethnicity, minority groups, cultural enclaves, institutional structures and urbanization being the most prominent. The many emphases in the treatment of this variety of concepts in international geolinguistic literature may be reduced to three main approaches.

- *Language distribution*: The identification of segregation patterns, zones of contact and core areas within a spatial framework of language diversity.
- *Language change:* The identification of areas of growth and decline amidst the dynamic structure of a language in time and space.
- *Language environment:* The identification of the physical, social, historical, political and economic fabric within which the distribution of and changes in language take place.

The geolinguistic approach accommodates three basic components, i.e. a three-dimensional study focusing on *language* as a linguistic phenomenon, the *locality* where the language is used, and the individual *speaker or society* using the language. Language studies are carried out at various scales, namely international (macro), national (meso) and urban (micro) levels. Phrased differently, geolinguistics seeks answers to the questions "what, where, when, who and why?" of language.

In summary then, geolinguistics is a subdiscipline which makes extensive use of the theories and methods of other academic disciplines. It has an interdisciplinary home, mainly in Geography and Linguistics. Sociology and communication theory also provide important backup. Surprisingly, in the past a geolinguistic view on language has generated little research in South Africa's diverse and complex multilingual society (Van der Merwe, 1988:89). The Human Sciences Research Council and the Department of Geography at the University of Stellenbosch are, however, currently in the process of remedying this situation by launching a systematic research project on language mapping in South Africa, linking the conceptual and empirical elements of Geolinguistics.

3. LANGUAGE MAPPING IN SOUTH AFRICA

The national Language Atlas of South Africa and the Metropolitan Atlas of South Africa are two components of a comprehensive project relating to language distribution on the meso and micro level. The research was initiated in 1986 and will continue for some years in the foreseeable future.

3.1 National Language Atlas

This thematic atlas, published in 1990, was the first true linguistic atlas in South Africa (Grobler et al, 1990). The compilation and organization of the atlas was carefully considered. Comprehending the territorial and spatial dimensions of language is crucial if we are to penetrate its real cultural, social and political meaning. This is the specific aim of the series of maps in this atlas. The distribution patterns of the main language groups are portrayed cartographically in order to identify areas of concentration and to distinguish broad regional patterns. In doing so, a baseline frame of reference and a source of information has been created to facilitate understanding and planning of language communication in South Africa.

An assessment of any map pattern should take cognisance of the context and the nature of the data from which it has been created. Population censuses are not without limitations, yet they remain the most complete official sources of information on the population characteristics of a country. The maps and accompanying descriptions in this atlas are based on South Africa's 1980 population census, which was undertaken by the Central Statistical Services and made available on computer tape. This made it possible to analyse the language charactistics of the country's estimated 25 million people within 271 magisterial districts and to portray these patterns cartographically.

Various statistical-analytical techniques and thematic map procedures were applied during the preparation of the atlas. Computer mapping facilitated experimentation with many alternative options before final map production. The selection of map topics was aimed at presenting a balanced and representative cross-section of the heterogeneous language spectrum in South Africa. The contents of the atlas therefore comprise 23 maps which have been systematized according to five main topics:

- Orientation: 2 maps
- Home language: 14 maps
- Dominant and relative language concentration: 2 maps
- Speaking knowledge of official languages: 2 maps
- Literacy patterns: 3 maps

A short description precedes each group of maps, providing certain background information, as well as a brief interpretation and explanation of the individual maps. Matters discussed include the number of speakers of each language, its origin and history, the geolinguistic features and particularly the distribution pattern of the speakers of each language as shown by the map.

The language patterns revealed by the altas have much in common with many concepts related to geolinguistics. Probably one of the most striking characteristics of the South African population is its linguistic diversity and heterogeneity. A clear indication of this is the 24 sizeable home languages enumerated in 1980. The language composition of the population, combined into 14 main groups, is depicted visually on Figure 1. Zulu and Afrikaans dominate the linguistic scene - 24,4% of South Africa's population regard Zulu as their first home language, while 19,8% Afrikaans speakers do so. The only other languages with more than 10% representation are Xhosa and English. The users of the ten African languages jointly constitute roughly two-thirds of the population of the country.

The geolinguistic picture of the language scene in South Africa reveals a complex but fascinating spatial pattern with historical, political and demographic links. Although each language map conveys a unique message, general trends can be gleaned from the collection of maps. A striking characteristic of the South African language situation is that there are specific districts or regions where each of the most commonly used home languages concentrate as the dominant language. This can clearly be seen on the dominant language map (Figure 2). The core area of Afrikaans is located in the south-western part of the country, adjacent to its historic point of origin, due to the large number of coloured and white Afrikaans speakers residing there. Since it is best represented in the country's metropolitan centres, the distribution of English appears more scattered. The two official languages and the European immigrant languages usually interact in the same areas. Accordingly, metropoles display a

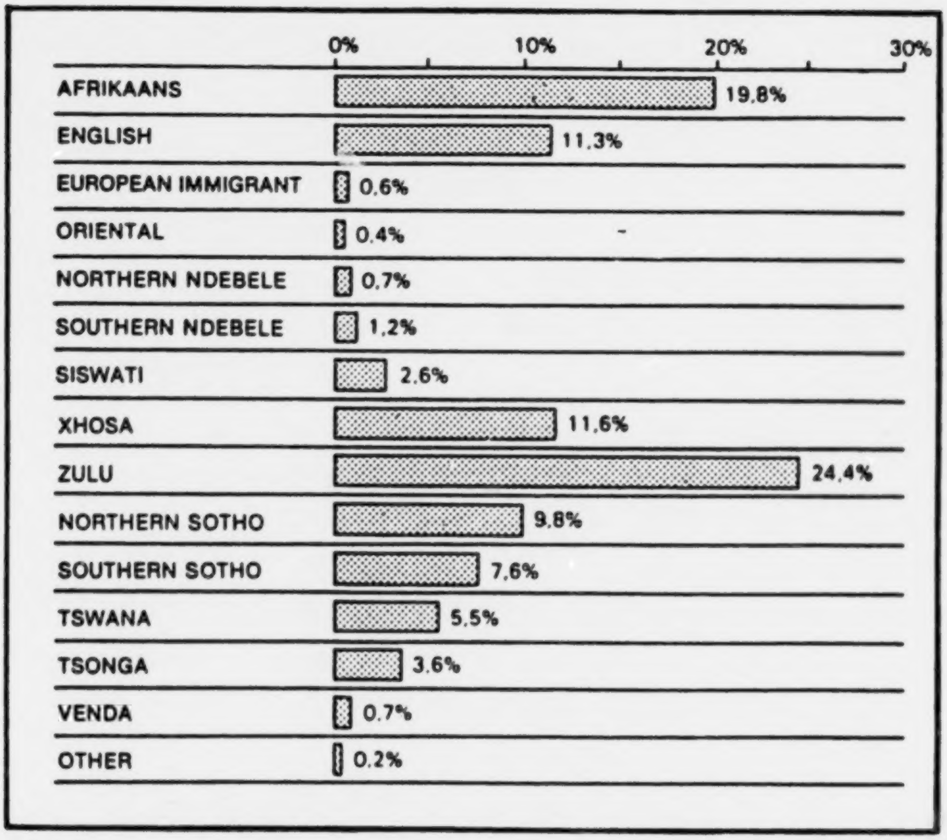

FIGURE 1 : LANGUAGE COMPOSITION OF SOUTH AFRICA, 1980

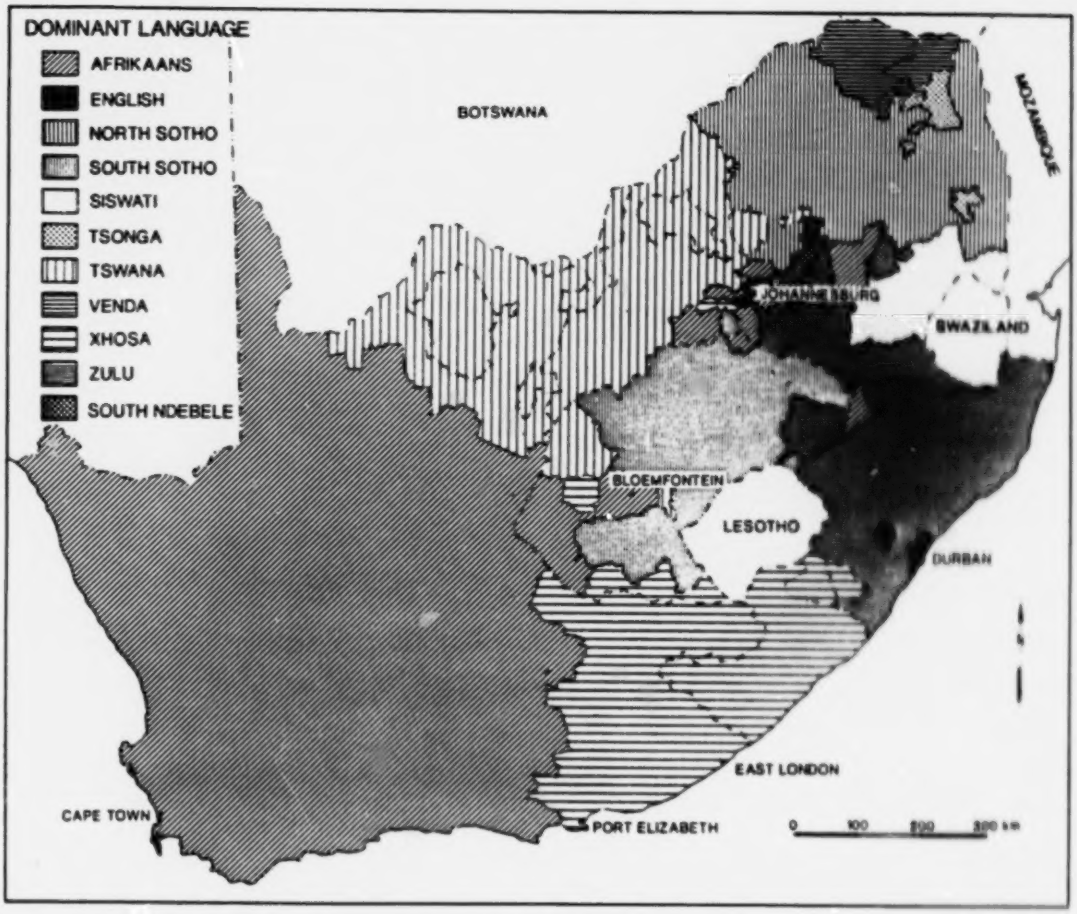
DOMINANT LANGUAGE
AFRIKAANS
ENGLISH
NORTH SOTHO
SOUTH SOTHO
SISWATI
TSONGA
TSWANA
VENDA
XHOSA
ZULU
SOUTH NDEBELE
BOTSWANA
MOZAMBIQUE
JOHANNESBURG
SWAZILAND
BLOEMFONTEIN
LESOTHO
DURBAN
EAST LONDON
CAPE TOWN
PORT ELIZABETH
0 100 200 300 km

FIGURE 2 : LANGUAGE DISTRIBUTION, SOUTH AFRICA

BEST COPY AVAILABLE

cosmopolitan character with a mixture of all the languages sharing a common urban space. Only a micro level analysis can unravel such a complex situation.

Although well represented in the cities, African languages tend to concentrate in single-languages cores in spatially segregated rural regions as apparent ethnic islands. The traditional home area of each African language coincides more or less with a self-governing 'homeland' or neighbouring country harbouring it as an official language. The Nguni languages (Swazi, Xhosa, Zulu) occur in the east and along the coast, the Sotho languages (North Sotho, South Sotho, Tswana) in the west and on the inland plateau, Venda in the far north, and Tsonga interspersed between the Venda, Sotho and Nguni in the Eastern Transvaal. The clearly distinguishable areas of concentration of the main languages prompt the question as to whether language policy in South African should not perhaps provide for the official recognition of languages on a regional basis (Prinsloo & Malan, 1988). This could mean the recognition of different African languages alongside the two official languages, English and Afrikaans, on a regional basis.

3.2 Metropolitan Language Atlas

The continuation of the HSRC language mapping project will focus in future more specifically at micro level on the large urban areas of South Africa. Zelinski and Williams (1988) emphasise the need for geolinguistic analysis within the language milieu of complex urban systems. Amidst large metropolitan population concentrations a language demonstrates its potency as a mechanism for social communication most vividly. There is, however, as yet little clarity on the nature, extent and effect of linguistic processes and forces active on the micro-urban level. The metropolitan areas are highly multilingual, indicating the need for more detailed investigation.

The envisaged Metropolitan Language Atlas of South Africa will statistically analyse, cartographically portray and descriptively interpret the distribution and interaction between the main language groups in specific urban areas. Such a study has not yet been attempted in South Africa and promises to be of great value for language planning, provision of health facilities, education, political restructuring and media communication. Approximately 60% of the country's urban population is accommodated within the Johannesburg/Witwatersrand, Cape Town, Durban and Pretoria metropoles. The metropolitan language maps will therefore focus on this group of metropoles. The 1991 population census will be used as data base, while suburbs/residential areas will function as unit of analysis. Mapping will be based on the 14 main language groups as already identified in the national atlas. The following is a provisional summary of the planned map types:

1. **Orientation**
   - 1.1 *Location* of the four selected metropolitan areas in South Africa (against the background of the national patterns of the 1991 language distribution on a regional basis).
   - 1.2 *Physical structure* of each of the four metropolitan areas (for example residential boundaries, main traffic routes and topography).
   - 1.3 *Population distribution* within each of the four metropolitan areas (proportional circles).

2. **Language patterns in Cape Town**
   - 2.1 *Dominant concentration according to home language* : Language with absolute majority in each residential area with reference to all 14 main language groups.
   - 2.2 *Relative concentration according to home language* : The language with the highest location quotient in each residential area with reference to all 14 main language groups.
   - 2.3 *Distribution of Afrikaans according to home language*: The number as a percentage of the total population in each residential area, or the number in each residential area as a percentage of the total Afrikaans speakers in the city.
   - 2.4 *Distribution of Afrikaans according to speaking knowledge* : The number as a percentage of the total population older than 15 years of age in each residential area.
   - 2.5 *Distribution of Afrikaans according to writing skills* : The number as a percentage of the total population older than 15 years of age in each residential area.
   - 2.6 *Distribution of English as home language* : The number as a

percentage of the total population in each residential area.

2.7 *Distribution of English according to speaking knowledge* : The number as a percentage of the total population older than 15 years of age in each residential area.

2.8 *Distribution of English according to writing skills* : The number as a percentage of the total population older than 15 years of age in each residential area.

2.9 *Distribution of Africa languages (combined) according to home language* : The number as a percentage of the total population in each residential area.

2.10 *Distribution of Africa languages (combined) according to speaking knowledge :* The number as a percentage of the total population older than 15 years of age in each residential area.

2.11 *Distribution of Africa languages (combined) according to writing skills* : The number as a percentage of the total population older than 15 years of age in each residential area.

2.12 *Contact/transition zones of home language* : Residential areas where two language groups both represent between 33% and 67% of the population.

Socio-economic profile : Tabulations of the actual numbers per residential area, on which the map ratios are based, will be recorded for each individual language group in an addendum. A socio-economic and demographic profile for each of the 14 main language groups in the respective metropolitan areas will be compiled and transcribed in tabular form. Furthermore, a segregation index and a centre of gravity will be determined on the maps for each language group for comparative purposes (Shaw & Wheeler, 1985).

3. Language patterns in Johannesburg

As in 2.1 - 2.12 and socio-economic profiles (This large primate city will possibly be dealt with as three separate units, namely Central Johannesburg, West Rand and East Rand).

4. **Language patterns in Pretoria**
   As in 2.1 - 2.12 and socio-economic profiles.

5. **Language patterns in Durban**
   As in 2.1 - 2.12 and socio-economic profiles.

The data for **Cape Town**, the oldest city in the country, will be processed first. This metropolitan area will be used as a model from which a suitable methodology can be developed. Such a blueprint can then be applied to the other metropolitan areas. Certain provisional maps relating to the 1980 population census have provided illuminating and informative patterns and are linked to concepts associated with geolinguistics (Van der Merwe & Le Roux, 1989).

In order to gain perspective on the spatial patterns within the total language spectrum of the city, the language composition of Cape Town's population of approximately 1,5 million people has been summarised in Table 1. The three most prominent languages are Afrikaans, English and Xhosa. It is therefore not surprising that when individual languages are mapped for each residential area, these three languages emerge as the only dominant languages (Figure 3). The largest concentration of the Afrikaans speaking group are located in the northern and eastern suburbs. The lowest concentration of this group is quite apparent in the city's central area and south-western suburbs, where the English speaking group exerts the most influence. As a result of apartheid ideology (Group Areas Act of 1950), the Black Xhosa speaking group is highly concentrated in three segregated localities. Apart from this forced language division, the European minority groups would have provided an example of migration and spontaneous segmentation, vaguely interpreted as cultural enclaves.

TABLE 1 : LANGUAGE COMPOSITION OF CAPE TOWN

	White	Coloured	Asian	Black	Total
Afrikaans	34,7%	77,1%	20,7%	0,1%	52,7%
English	60,7%	22,6%	50,7%	0,1%	32,3%
European Immigrant	3,0%	-	-	-	1,0%
Oriental	-	-	7,5%	-	0,1%
Xhosa	-	-	-	93,8%	11,9%
Other Black	-	-	-	3,6%	0,4%
Other	1,6%	0,3%	21,1%	2,4%	1,6%
Total	100,0% 471 000	100,0% 775 000	100,0% 17 000	100,0% 183 000	100,0% 1 446 000

The distribution of any language usually manifests a core area in which the highest concentration is located and where the influence of other languages is at its lowest. A contact/transition zone, on the other hand, is an area where statistically the language exists in relative equilibrium together with other languages and is therefore under the strong influence of such competitive languages. It appears that similar residential areas can also be identified on an urban level in Cape Town. When 80% or more of the residents have indicated a specific language as their home language, the residential area is referred to as a core. The core areas of the respective languages shown in Figure 4 confirms the pattern depicted in Figure 3 and represents the probable nuclei out of which the languages have diffused. Transition zones, on the other hand, have been defined for the purpose of this study as those residential areas where two language groups each represent between 40% and 60% of the total population. This implies that a relative degree of integration and assimilation has occurred. It is interesting to note that the transition zones illustrated on the map are fairly dispersed throughout the city.

The spatial patterns illustrated in Figures 3 and 4 suggest underlying processes of competition, assimilation, interaction, social ecology and language segregation. The tendency of people to settle amongst people of similar socio-economic and cultural status is statistically measured with the aid of the segregation index (0% represents complete integration, while 100% is total segregation). Afrikaans does not reflect an even distribution in relation to other language groups in the metropolitan area of Cape Town. Its relatively high index value of 62% confirms the map patterns in which Afrikaans is strongly represented in the northern and eastern suburbs. The comparable segregation index for English and Xhosa is 57% and 93% respectively. The latter is a clear manifestation of the colonial city structure in apartheid South Africa. The centre of gravity of the respective languages (Figure 3) strongly reflects both centrality and segregation within the city's overall language distribution. Political, administrative, historic and economic forces have played a significant role in the complex language patterns found in South Africa's cities. These pose numerous problems and challenges for geolinguistic research in this country.

4. CHALLENGES AND PROBLEMS

The largest challenge for language mapping in South Africa is to apply geolinguistic concepts and techniques in such a way that the maps are of value and benefit in the following spheres:

- In *education* the choice of language taught at schools, colleges and universities is dependent on national language distributions and local ethnic patterns. The same applies to information relating to *health.* Meaningful maps should facilitate good decision making in this regard.

- Similarly, knowledge of the distribution of languages is necessary in *commerce and communication*, i.e. the choice of languages to be used in local advertisements. The same applies to decisions regarding newspapers and other publications in certain languages, as well as the area covered by radio and television broadcasts in African and other languages.

- When defining *development and planning regions,* language distribution is of vital importance. Common cultural ties and ethnic preferences should not be ignored in management and policy strategies of central and local governments.

- In the new post-apartheid South Africa, political decision makers must take note of the national and urban language distribution. For example, any new *regional delimitations* deemed necessary for regional government must take into account the ethnic patterns depicted by the language distributions in urban as well as rural areas.

- Language maps may also serve a practical purpose should the question of a *third official language* on a regional basis be addressed in future.

- South Africa's unique language patterns can make a valuable contribution to *international scientific knowledge* in the field of geolinguistic theory.

Producing meaningful language maps in South Africa for the above-mentioned purposes will, however, not be without some problems :

- The sensitivity of language as ethnic and cultural parameter in a polarised South African community.

- The exceptionally diverse and complex language composition of the population, which may even become more so in the new post-apartheid society.

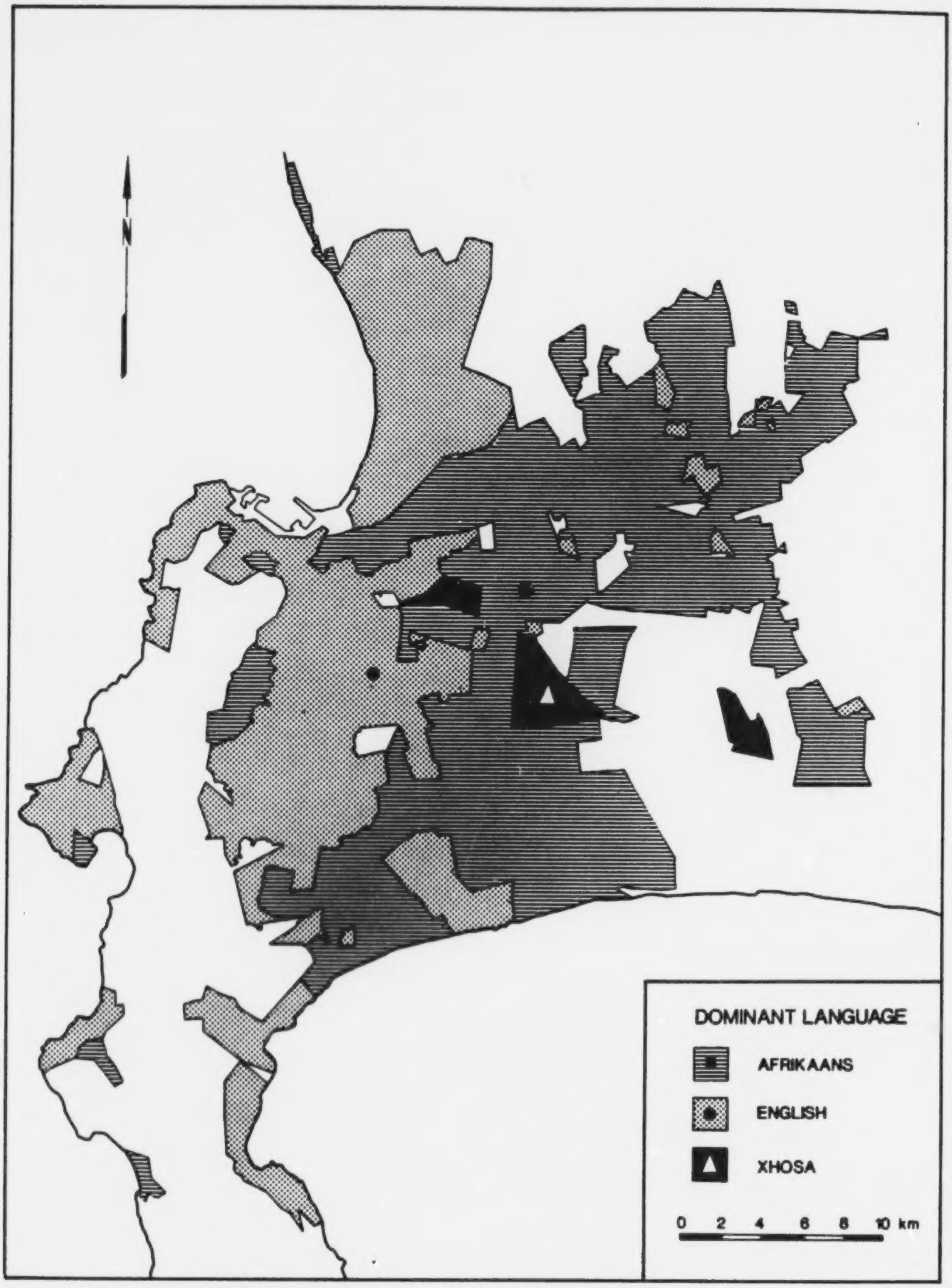
N
DOMINANT LANGUAGE
AFRIKAANS
ENGLISH
XHOSA
0 2 4 6 8 10 km

FIGURE 3 : LANGUAGE DISTRIBUTION, CAPE TOWN

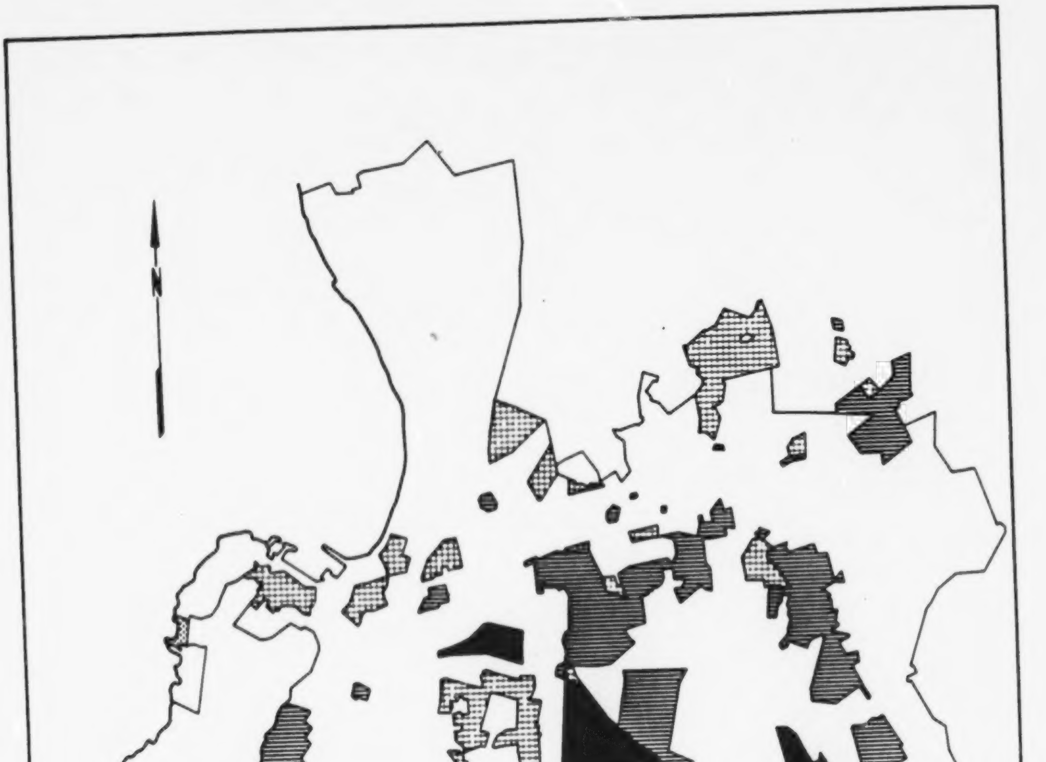
N
CORE AREA : AFRIKAANS
CORE AREA : ENGLISH
CORE AREA : XHOSA
TRANSITION ZONE : AFRIKAANS/ENGLISH
0 2 4 6 8 10 km

FIGURE 4 : LANGUAGE CORE AREAS AND TRANSITION ZONES, CAPE TOWN

- The unreliability of official census data and the limited nature of information relating to language.
- The uneven distribution of the population, both nationally and on a intra-urban level, which limits mapping on a comparative scale.
- The financing of research projects on language does not as yet sufficiently appeal to the public and private sector.

Various research opportunities do exist for geolinguistics in South Africa. Although our attempts have added to the knowledge of language in this country, many gaps remain and unanswered questions need to be explored. In the wider search for a universal corpus of a geolinguistic conceptual base, research must preferably not take place in academic isolation. Therefore, an appeal for international co-operation is extended to other geographers and geolinguists to join us in mutual projects.

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METHODS AND POSSIBILITIES FOR MAPPING BY ONOMASTICIANS

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1. Introduction

Generally, a cartographic representation of onomastical data serves two objectives: the linguistic map is a working instrument, a tool, for the onomastician first, as it provides him with an idea of the spatial distribution of the data or phenomena, and with the possibility to analyse it. In the second place, the maps provide a means for communication of the research results to a larger audience. This communicative function is linked to direct information transfer. This presupposes an understanding of the link between the phenomena mapped and their qualitative, ordered or quantitative attributes on one side and the graphical variables to be used for their representation on the other side. This is not a haphazard linking, but should be based on the graphical grammar as proposed by the French cartographer Jacques Bertin (Bertin 1967).

It is the objective of the following paragraphs to show the various possible mapping methods, and the problems their selection might bring. It is the intention to show as well the possibilities they would offer for interpretation.

2. Mapping methods

No standardized terminology exists as yet for the various map types, that emerge as results of different mapping methods. Emil Meynen tried to standardize the terminology in his Multilingual Dictionary of Technical Terms in Cartography (Meynen 1973), but his proposals have not been universally followed. Wherever necessary, a number of synonyms will be used.

2.1 Proportional symbol maps

This is a method according to which the size of quantitative linguistic data (such as the number of french-speaking people per municipality) is expressed through symbols that are proportional in the size of their surface with the values to be rendered. These proportional symbols can either refer to locations (such as cities for instance) or to

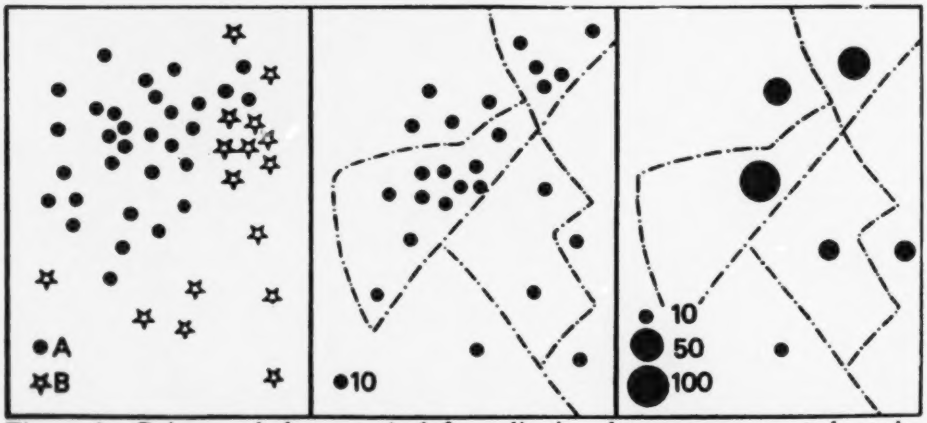


Figure 1 - Point symbol maps. At left qualitative data are represented, at the middle and at right quantitative data; at right this is done through proportional symbol maps.

areas (such as municipalities, provinces, countries, etc).
These proportional symbol maps show us the variations in numbers and the relations between the values valid for different localities or areas (see figure 1, middle and right).

2.2 Qualitative symbol maps

Many linguistic maps show, through variations in the forms of symbols, variations in qualitative aspects, such as the various names for specific objects or acts. It is the goal of such maps to show the extent of the areas over which specific expressions or words are used (see figure 1, left). In order to visualize these distributions, areas are separated, consciously or not, by drawing (mental) boundaries between different symbols. The possibilities for this boundary drawing, be it mentally or real, are influenced by a number of factors. One is the density of observations, another is the availability of data, and the regularity of their distribution. Another one is the availability of observations or data. As figure 2 shows, the non-corrected image in the middle shows a pattern quite distinct from the corrected one, at right: the map at right would also serve as an inventory of the status of the excavations and as a forecast mapfor the location of future finds.

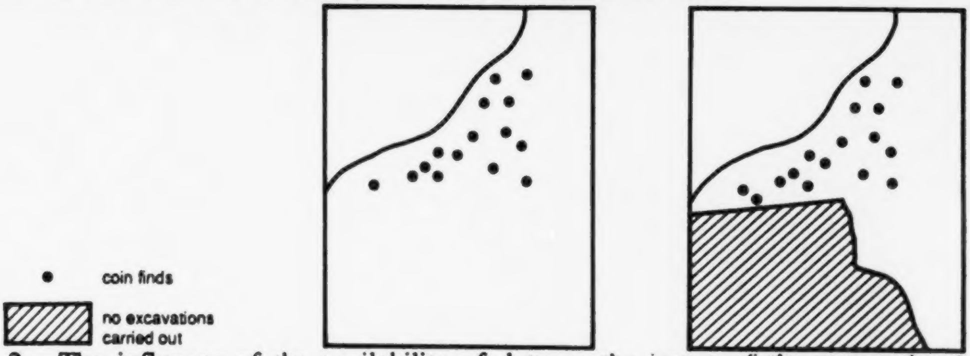


Figure 2 - The influence of the availability of data on the image of the geographical distribution (dots indicate coin discoveries, the shaded area has not been excavated yet).

2.3 Chorochromatic maps.

In this method, qualities, assigned to areas, are rendered by applying colours or patterns in these areas. Figure 3 shows the transformation of a qualitative symbol map into a chorochromatic map. Such a transformation can only be performed, however, when one has made sure that the phenomenon represented is indeed homogeneously distributed, and that the qualitative attributes rendered belong overwhelmingly to a specific category. In a language map, for instance, all areas indicated as French-speaking should indeed

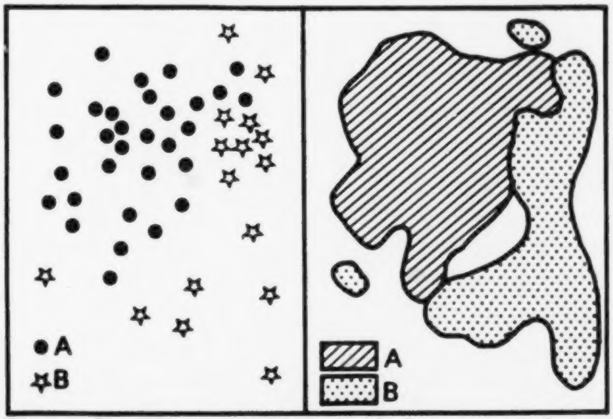


Figure 3 - The qualitative symbol map at left has been transformed into a chorochromatic map at right.

contain a large majority of people with French as their mother tongue.

Such a transformation of point symbols into area symbols is called for when clarity is an issue, and it is linked to the representation of the information at smaller scales, when generalisation is required. It should be born in mind, however, that for these chorochromatic maps a complete coverage is necessary: it is only with chorochromatic maps that one is confronted with the requirement that the whole surface of the area represented should be filled in by the pattern or colour. So one needs data for the whole area, no gaps can be left white.

2.4 Special issues on chorochromatic and point symbol maps

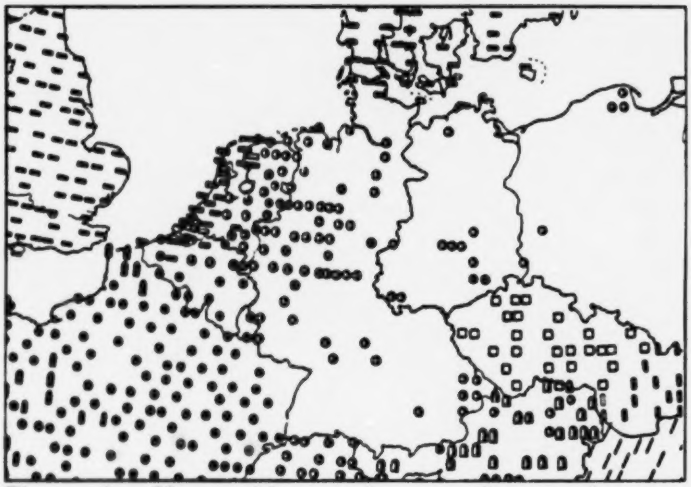


Figure 4 - Here, white on the map denotes the non-existence of the rendered phenomena in these areas.

Again, white on the map denotes that the phenomena rendered on the map do not occur at those locations. In figure 4 white has been applied correctly, as the word forms indicated by the point symbols do not occur in either Germany or Poland.
In figure 5 white has not been applied in the proper manner. As was said above, white indicates the absence of the phenomena, and should, in thematic maps, not indicate the absence of data. Absence of data should be indicated by neutral area colours or point symbols, such as grey, but not by white areas.

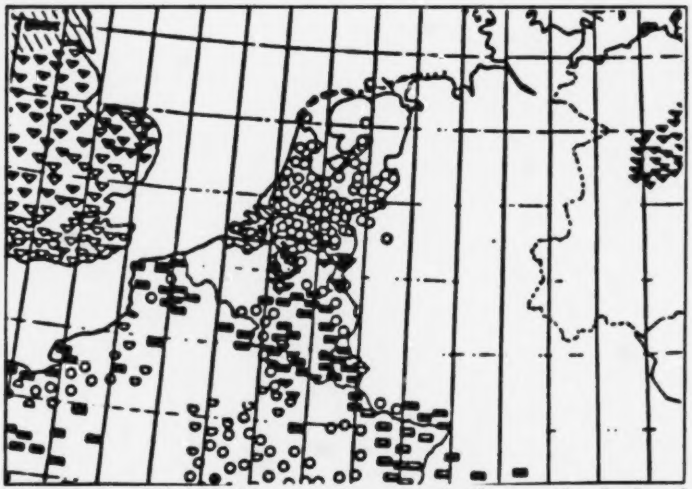


Figure 5 - Here, white on the map indicates the lack of information about the rendered phenomena. This affects the image of the distribution.

Another issue for qualitative point symbols and area colours or patterns is the fact that they should not be too dissimilar in their visual "weight", as darker symbols or colours tend to attract the attention, to the detriment of lighter colours or symbols, while - as it is qualitative data - all data should be experienced as being of equal importance (see figure 6).

It is almost inevitable that quantitative conclusions are derived as well from chorochromatic maps, even if they have not been produced for that objective. People will always, when they lack geographical knowledge of the areas, equate surfaces with numbers. This would only be a valid conclusion when the population would be distributed evenly over the area, which it seldom is. In order to avoid these false conclusions from chorochromatic language maps, the actual numbers concerned should be displayed as well.

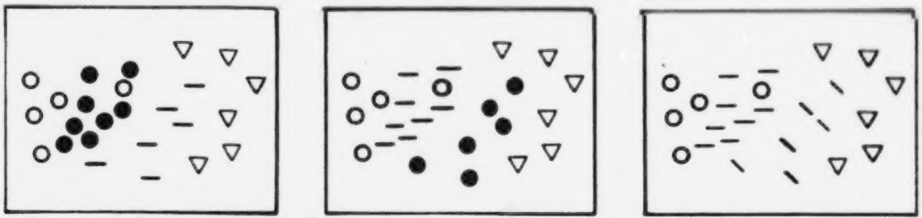


Figure 6 - At left one group of observations is dominant, in the centre another; at right there are no dominant symbols.

When one looks at the map in figure 7, someone unfamiliar with population distribution in Australia might draw the conclusion that, as the areas they inhabit are almost equal, the numbers of speakers of english and of aboriginal languages are almost equal as well. However, as the aboriginals inhabit (semi)desert areas their population density is only a fraction of that of the areas where the english-speaking population dominates. In order to correct the initial false impression, a diagram has been added which shows the actual numbers concerned.

2.5 boundary lines on linguistic maps

As they coincide with changes in pattern or colour, boundaries on chorochromatic maps are overemphasized. This is seldom the objective, as not the boundaries are the issue but the size and location of the distribution areas. In history maps one is often able to avoid overemphasizing boundaries by the use of full colours for core areas and of diluted colours for marginal areas, with a colour intensity diminishing towards the borders. In such a situation the exact location of the boundaries is not too important, and this is a bonus, as in most cases it would be impossible to locate them exactly anyway. This is what strikes one in language maps: the seemingly infallible character of the boundary lines (isoglosses, i.e. boundaries between similar language characteristics, such as sounds, structures or conjugations) which have been drawn between point symbols that sometimes are far apart from each other. The fact that they will be printed often adds to their prestige and apparent accuracy. Good examples are Orton's Word Geography and the Deutscher Wortatlas (see figure 8).

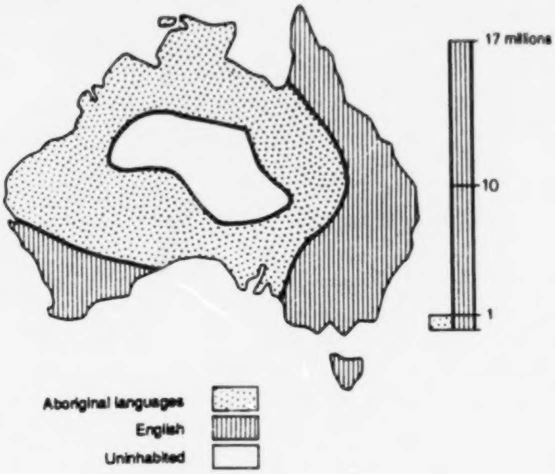


Figure 7 - The diagram here corrects the initial false impression about the population numbers involved in this language map.

Boundaries as accurate as suggested by figure 8 can only be drawn when there is an abundance of data, or a regular density of data, and as far as I have gathered, linguistic maps do not fulfil these requirements. Moreover, one should study the nature of the terrain as well. It should be studies whether boundaries occur parallel with or perpendicular to communication links, such as highways or rivers, whether they coincide with administrative boundaries, or with barriers such as mountains, and also whether the changes in dialect occur gradually or progressively. It is only when such data are known that the accuracy and detail of the boundaries with which we are confronted is justifiable. Figure 9 shows how even a regular grid of observations may lead to different interpretations, and how this might be avoided by the introduction of boundary zones.

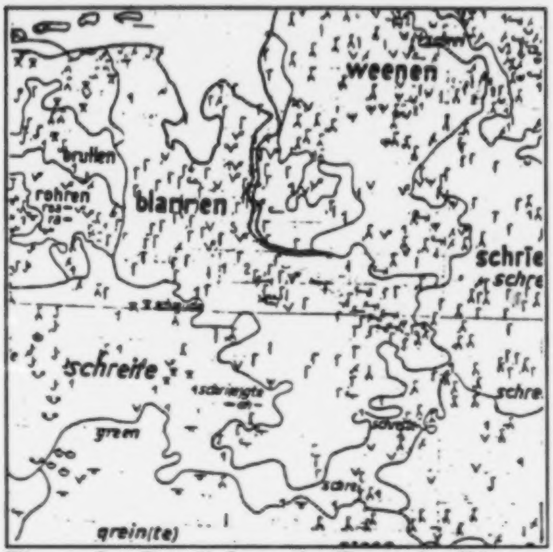


Figure 8 - Detail from the Deutsche Wortatlas, Vol.20-3. The symbols indicate exceptions to the homogeneous situation suggested by the boundary lines.

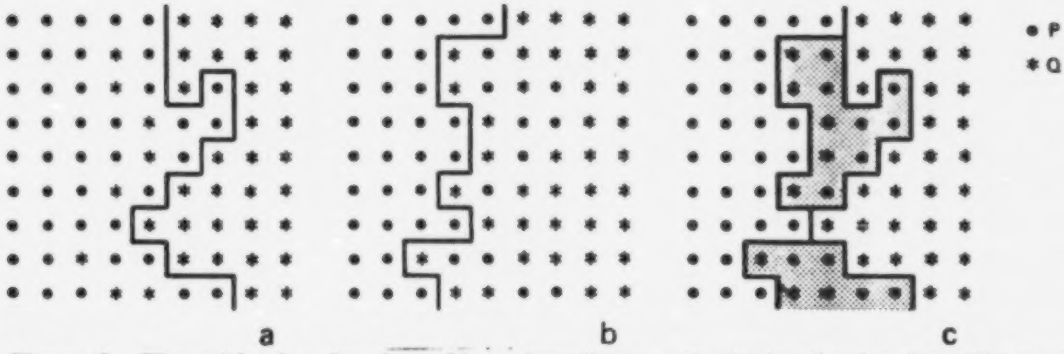


Figure 9 - The subjective drawing of boundary lines on the basis of point data. The best solution would be the incorporation of a boundary zone.

It has long been anticipated that it would be possible to draw boundaries between dialect areas there where many isoglosses would coincide. This method, known as "Grenzgürtelmethode" has first been introduced by the German geographer Otto Maull in 1915. In order to draw the boundary between Albania and Macedonia he mapped a large number of relevant characteristics: vegetation, climate, language, religion, etc. He drew the boundaries between these characteristics, such as language boundaries and vegetation zone boundaries, on the same map, and the frontier line between Albania and Macedonia was finally located there where the maximum number of individual boundary lines coincided. Though this method does not seem to score high as far as accuracy is concerned, in fact it is not less reliable then for instance modern correlation methods such as factor analysis. It is the problem in both methods to select the proper characteristics, and to weigh them one against the other, and the Grenzgürtelmethode has the added problem as how to render these weights graphically.

The number of isoglosses that should coincide before they would merit a dialect boundary is purely subjective. In linguistics such procedures could be standardized as soon as it would be defined how many differences in words, form- or sound phenomena would be required in order to regard some "speak" as a distinct separate dialect. It is Seguy's work which gives us some clues here.

The Sorbischer Sprachatlas for instance displays four boundary categories. Highest in the boundary-hierarchy is a thick boundary line which denotes or bundles 500 "sprachliche Unterschiede" or linguistic differences. It precedes boundary lines that represent over 30, between thirty and ten, and less than ten coinciding isoglosses. The lower the number of isoglosses they represent, the thinner the boundary lines. Figure 10 is an example of an isogloss map.

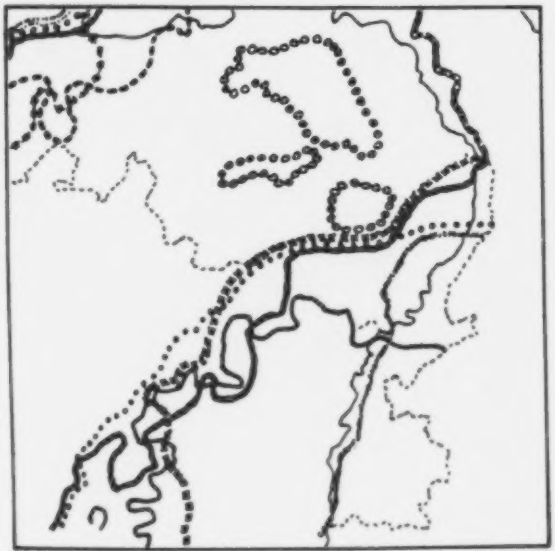
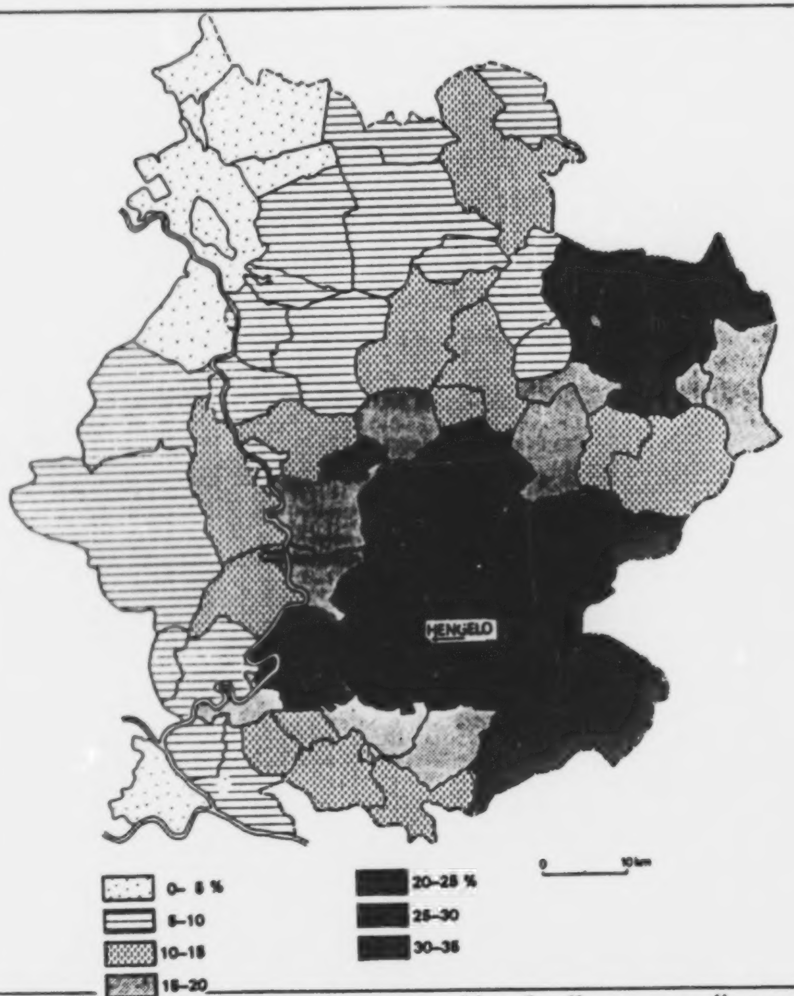


Figure 10 - Combination of isoglosses into a dialect boundary (from: J.Goossens, Pronominalia in het Land van Maas en Rijn. Taal en Tongval vol.21, 1969).

2.6 Choropleth maps

In this map type, relative quantitative data or intensities are measured for pre-defined areas (i.e. mostly for administrative areas) and rendered by area symbols that increase in value: they would have darker hues for higher relative values or intensities. Figure 11 is an example of this method: the percentage of family names that end in -ing/ink is rendered here by area shadings that increase in darkness. The following steps would be necessary for the production of such a map: after establishing the relevant ratio's for each area first a classification should be effectuated of the percentages found for the individual areas; each class should be assigned its own grey value or hue, and the last step would be the assignment of each individual area with the hue of the category it falls in.
A choropleth map shows the relative progress of the phenomenon. It cannot show any absolute quantities. When map 11 is compared to map 12, where the same information - number of people with family names ending in -ing/ink - then the choropleth map appears to distort the factual information. From the choropleth map one would get the impression that the centre of gravity for the phenomenon would be Hengelo, while the proportional symbol map shows us that it is, in fact, Enschede.

Another objection against the choroplet method is, that it suggests a homogeneous distribution of the mapped phenomena between the (administrative) boundaries. The example of Canada in figure 13 clearly illustrates this. On a provincial level, in the small inset map, the whole of Québec has the symbol "French speaking majority". If one steps down to district level, in the larger map, than the boundary of the area that has a french-speaking majority has to be drawn in a completely different way. The northern half of the


HENGELO
0
10km
0- 5 %
5-10
10-15
15-20
20-25 %
25-30
30-35

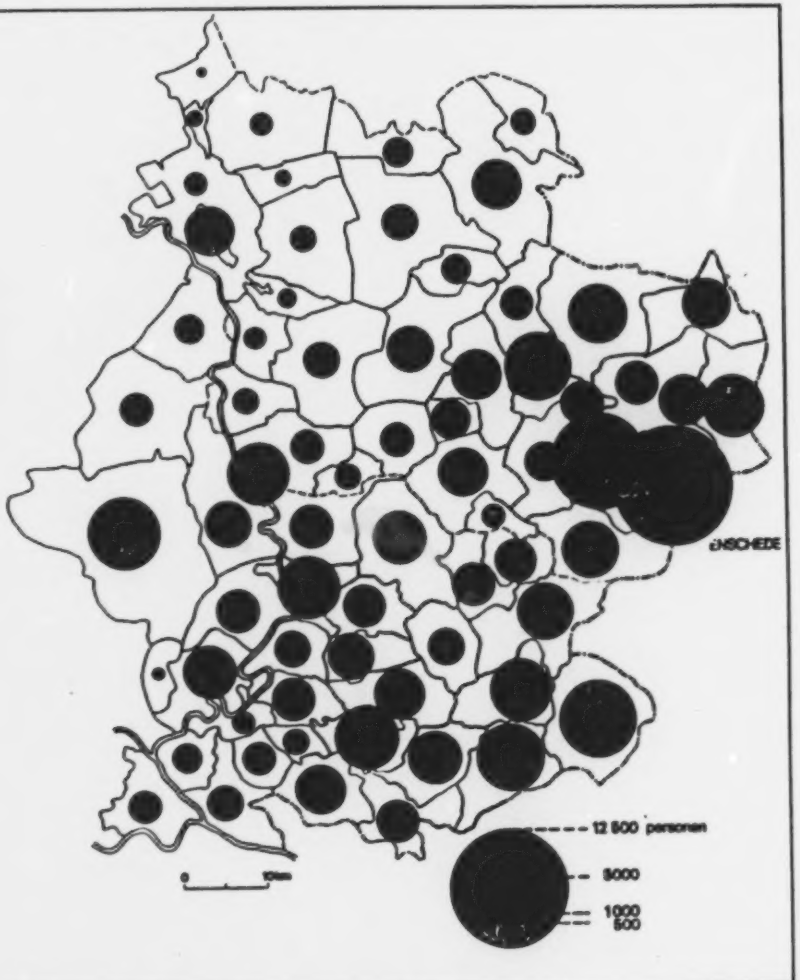

ENSCHEDE
12 500 personen
5000
1000
500
0
10km

Figure 11 (left) Percentage of persons with a family name ending on -ing/ink. Based on Atlas van Nederland, 1978.
Figure 12 (right) - Number of people with a family name ending on -ing/ink. Based on Atlas van Nederland, 1978.

province does not have a French- but a native languages speaking majority. The finer the meshes are of the net we cast, the more regional differences will emerge.

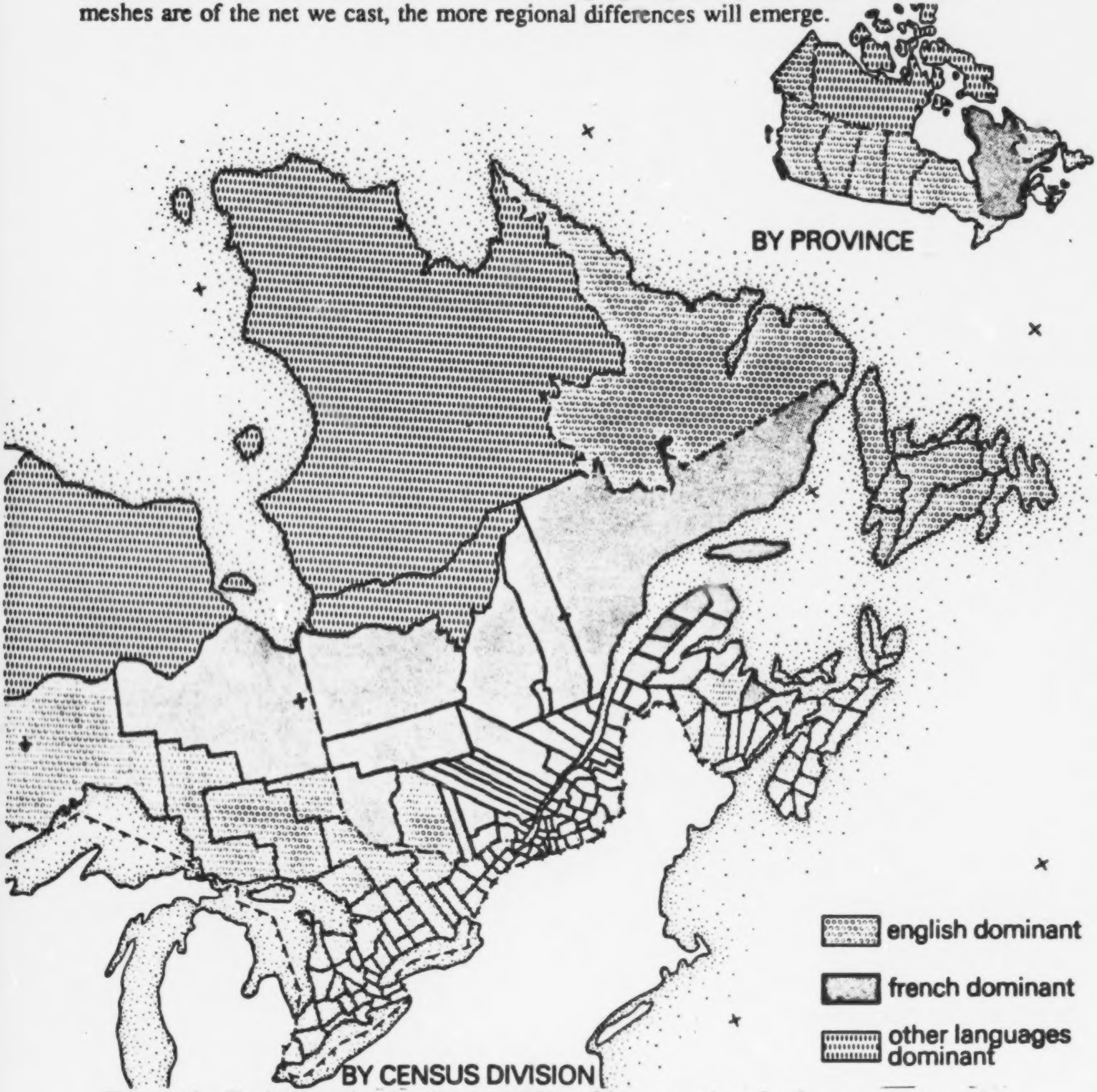

BY PROVINCE
english dominant
french dominant
other languages dominant
BY CENSUS DIVISION

Figure 13 - Faulty imaging by the suggestion of homogeneity of reference areas on choropleth maps (from: National Atlas of Canada, 1974).

2.6 Isoline maps

Isoline maps are maps that show differences in value or intensity through isolines; an isoline is a line that links points with the same value. In general, such points are being constructed by interpolation between points with a known value, such as meteorological observation points. The character of isolines requires that the phenomena mapped with this method have a continuous nature, that it constantly change in value and are measurable everywhere. Phenomena with a discrete distribution do not qualify for representation by isolines. Much depends, however, on the definition of the phenomenon. Population is a discrete phenomenon; population numbers for the area within one kilometer from a changeable point would be a continuously changing phenomenon.

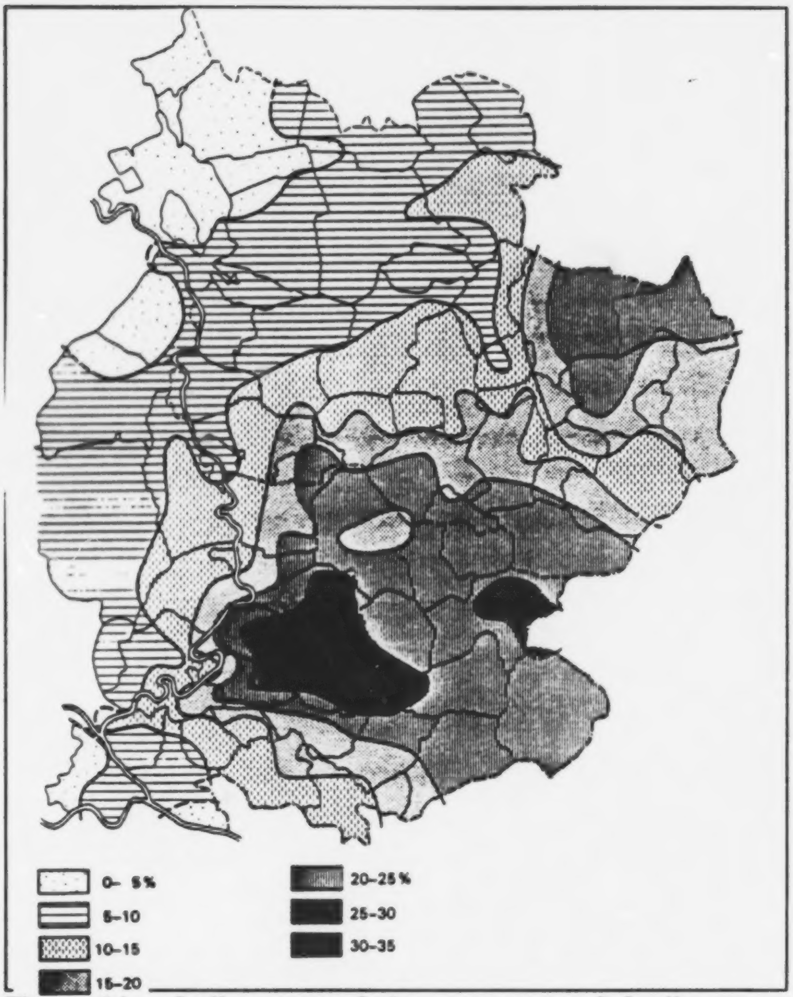


Figure 14 - Isoline map of the percentage of family names ending on -ing/ink (based on Atlas van Nederland, 1978).

So isolines are value boundaries within a continuum; isoglosses are not. They may be boundary lines within a continually changing linguistic landscape, but they do not link points with equal values. They delimit distribution areas. Nevertheless, isolines are also used in linguistic maps, whenever there is an historical dimension as well. Isolines that delimit the area inhabited by the germanic peoples in 1000, 800 and 500 AD function as isolines. Figure 14 shows another application of isolines, based on the data used for map 11. By interpolation between the data for all municipalities, which were assigned to the municipality centroids, the isolines were drawn here. When one compares map 14 with map 11, it stands out that the isoline map is much better in showing spatial trends, where the choropleth map shows relative values and the order between them.

2.7 Flow line maps

Though it is impossible, without taking refuge in computers and animation, to show movement on maps, an idea of movement can be simulated by using graphical cues that are associated with movement, or that evoke an idea of movement. Arrows are associated with movement, and figure 15 is a good example. With arrow symbols one may show a route, a direction along that route, and the magnitude of the movement by increasing or reducing the width of the arrow-symbol.

As movements are based on a certain order in time, graphical cues that suggest such an order can also be used to simulate movement: increases in darkness or in size have such an effect (see figure 16).

2.8 Diagrams on maps

The use of diagrams on maps seldom leads to readable maps, and consequently is not advocated here.

3. The base map

A geographical framework is needed to anchor the thematic information, otherwise it would be lost. But when this framework becomes too loud, it overshoots its objective. The function of the base map is to allow us to locate the phenomena rendered, and this is only effectuated by a severe selection of the contents of the topographic map. Rivers might be retained if they have an important value for orientation, and so are administrative boundaries.

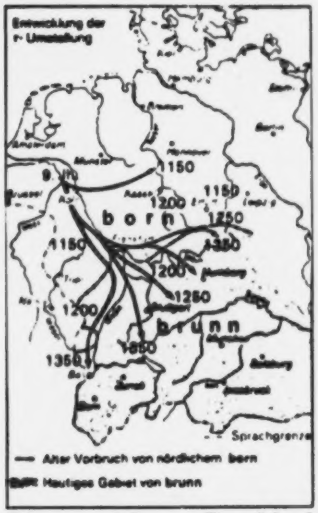

Entwicklung der r-Umstellung
Amsterdam
Münster
1150
1200
1150
1250
b o r n
1150
1350
1200
1250
1200
b r u n n
1350
1350
Sprachgrenze
Alter Vorbruch von nördlichem born
Heutiges Gebiet von brunn

Figure 16 - Graphical cues suggesting order, and therefore, in a chronological environment, movement (Bertin, 1967).

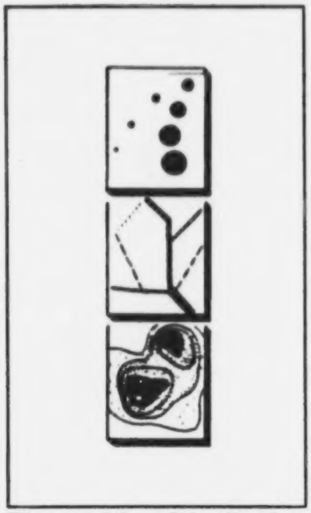


Figure 15 - Distribution of the word -born/brunn (from dtv Atlas zur deutschen Sprache).

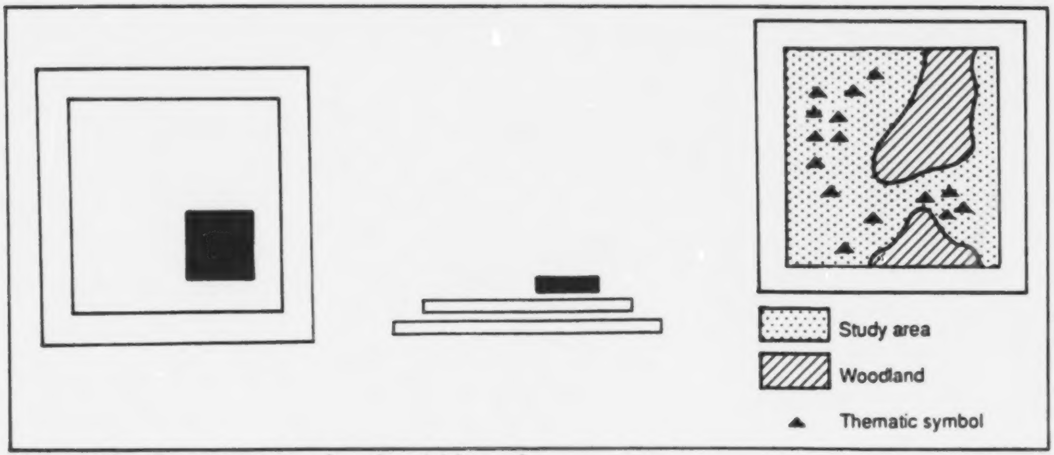

Study area
Woodland
Thematic symbol

Figure 17 - Construction of a visual hierarchy on a map.

It is often important to create a graphical hierarchy of the various information categoories which mirrors the relative importance of these categories. In a thematic map, the thematic information will be most important, and should be most conspicuous therefore. It functions

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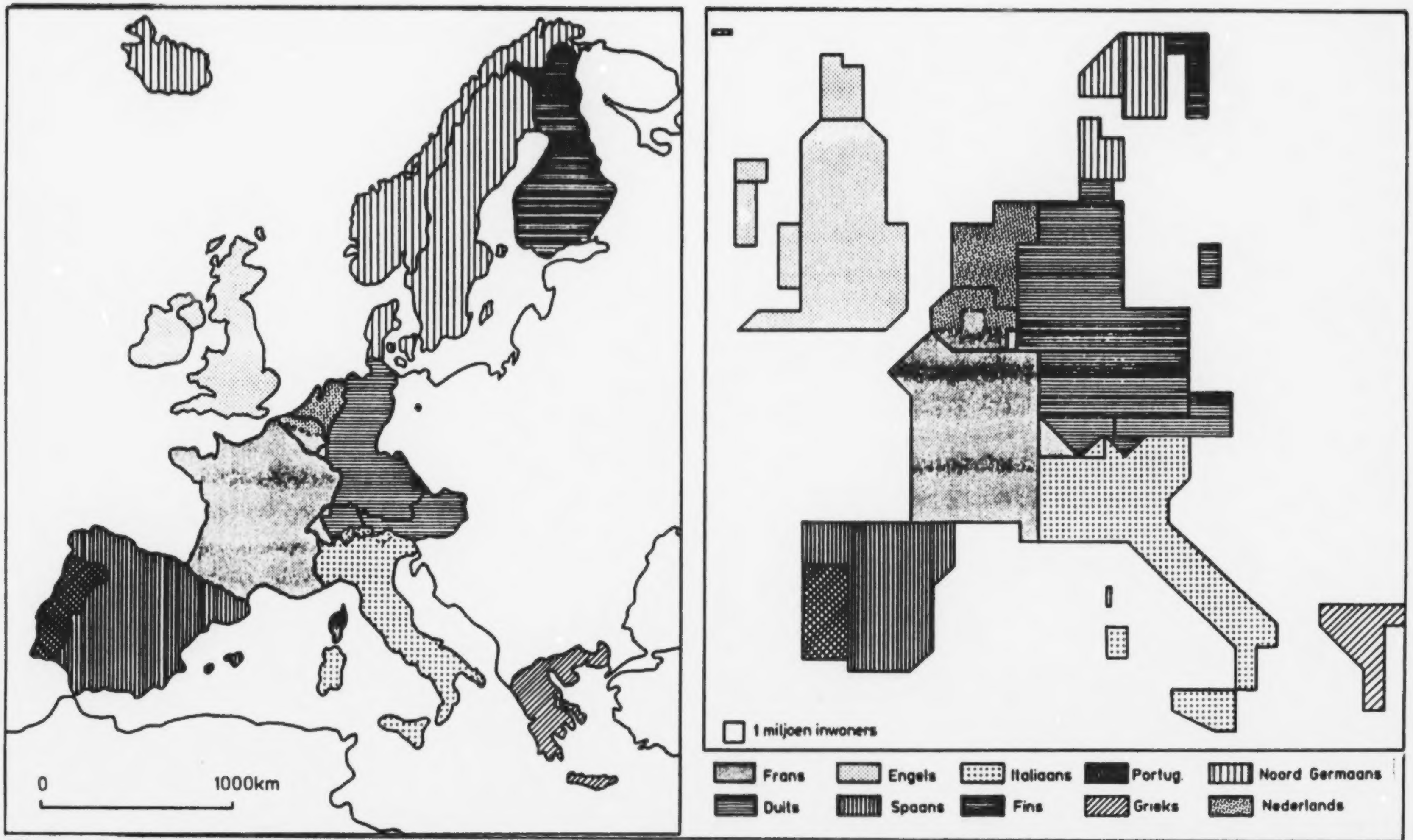
0
1000km
1 miljoen inwoners
Frans
Engels
Italiaans
Portug.
Noord Germaans
Duits
Spaans
Fins
Grieks
Nederlands

Figure 18 - Language map of Western Europe. At left, a geographical, at right a isodemographical base map. The surface areas of the individual countries are proportional with their population numbers (after Bartholomew-Warne, Atlas of Europe, 1974).

as figure, whereas the other elements should figure as ground. Figure 17 shows how such a graphical hierarchy can be constructed.

An important aspect of the base map is, that it should be relevant for the phenomenon. When it would be the aim of a map to allow us to compare numbers of different categories, then the relative size of map units might help us to transfer such a message. We are used to a geographical map scale for our maps. One square centimeter denotes, for instance, hundred square kilometers, if the scale is one to one million. But if that would be relevant, we could transform such a map by drawing it to a non-euclidic scale, for instance one in which one square centimeter denotes 1 million inhabitants. Figure 18 is an example of this transformation. It is a language map. At left it has a geographic scale, and at right an "iso-demographic" scale; the sizes of all countries have been drawn proportional to their numbers of inhabitants. And it at least provides new insight in the relative importance of the Dutch language in Europe, in relation to the Scandinavian languages.

4. Generalisation; observation densities.

When a small-scale map has to be derived from a large-scale one, photographical reduction never is the answer, as our eyes cannot discern lines or symbols that have been reduced too much. Moreover, the map would be too crowded, and one would not be able to perceive any structure in it. By simplifying the map information prior to reduction, and by exaggerating the retained map elements, one is able to present a legible image on a smaller scale. The various actions that are necessary here are referred to collectively as generalisation.

When one would compare in figure 13 the larger and smaller scale maps of Eastern Canada, it appears that, in order to land with a legible small scale image, the coastline in the large scale map has been simplified, the number of islands has been reduced and the size of the enumeration areas has been changed: counties or districts have been aggregated into provinces, as the individual districts are too small to be represented at this scale.

Thematic symbols have to be reduced in numbers as well, when the scale is being reduced.It should be the starting point that a) the relationships between the categories of symbols, their numbers or the areas they cover should be preserved on the reduced scales; that b) the most representative or characteristic data should be selected for representation at the smaller scales, and that c) the result should be well-structured and readable. But these criteria only guarantee a good result when the original data answer specific requirements. When qualitative data are concerned - such as the occurrence of specific word forms - that are valid for a quasi homogeneous population, than this should also be conveyed by the original map. Figure 19 shows the distribution of specific versions of the concept "tail" from the Taalatlas van Noord- en Zuid-Nederland. It was tried, obviously, to map all the reactions of the respondents, but over half of those answers could easily have been omitted from the map without impairing its information contents. When a reduction in scale is called for, the map should be redrawn first (see map 19b), in order to have a more balanced image prior to generalisation. In the generalised version not only have the boundaries been simplified, but a number of categories have been combined as well.

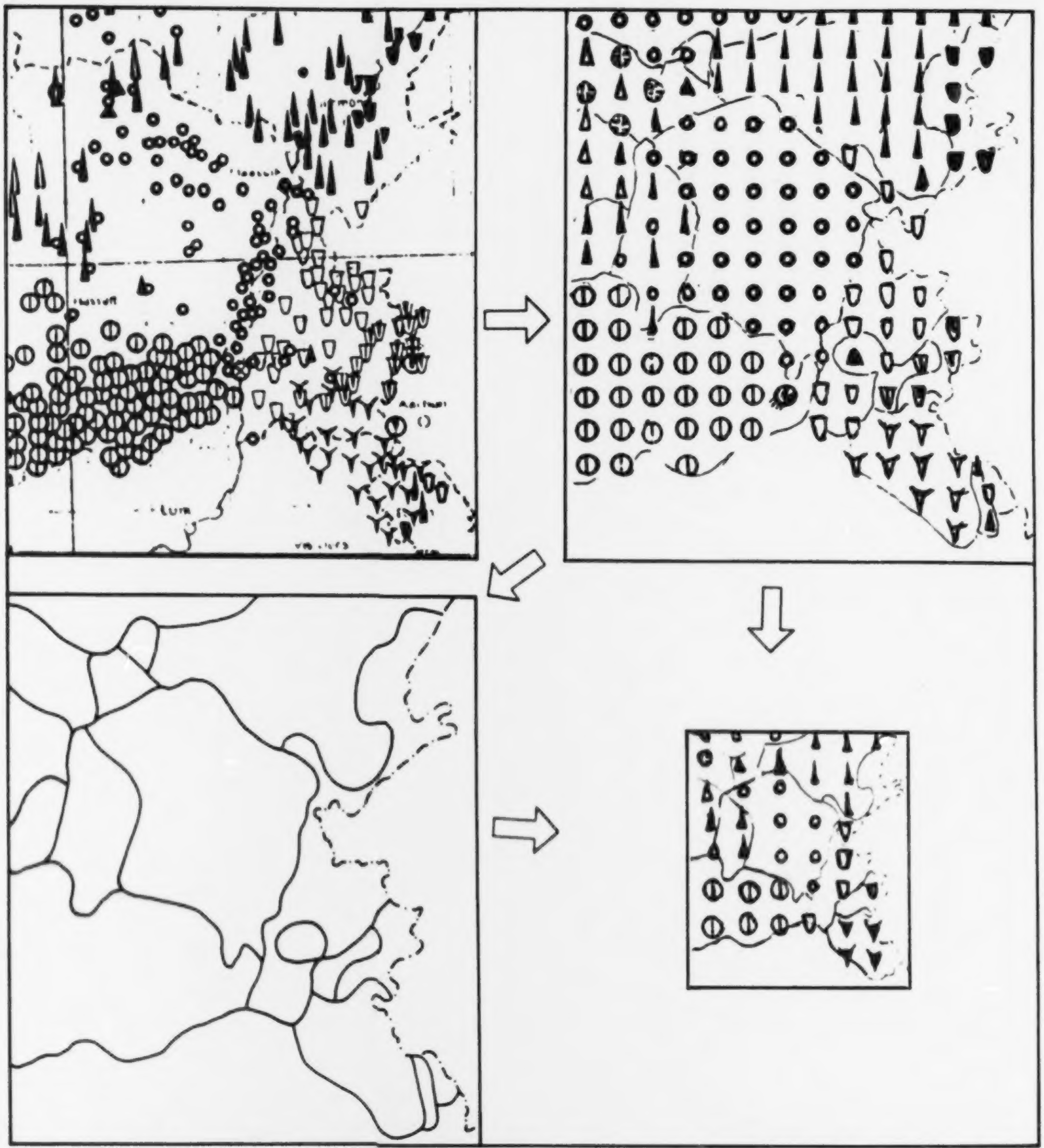

Figure 19 - Generalisation and reduction of a word-map. Boundaries have been drawn in b) right in between the symbols. 19a) is from the "Taalatlas van Noord- en Zuid-Nederland, 1939-56).

5. The use of colour

Bertin rightly claims that colour is not essential on a map. There are a number of colour aspects, however, that have the property to improve the map reading speed, as they increase the selection possibilities, provide important associative cues and generally do interest readers more in the maps. The use of colour is a distinctly alluring characteristic, therefore.

The associative value of colour is such that the use of specific colours will speed up the identification phase of map reading. On an agricultural map yellow areas will be associated with grain and light green areas with meadows. There is a distinct colour tradition on history maps: Prussia would be rendered in (prussian) blue, Russia would be green prior to 1917 and red between 1917 and 1991. In order to distinguish between a limited number of categories for point symbols colour differences are the most effective. But it should always be born in mind that these advantages should counterbalance the extra costs, as a colour maps is easily four times as expensive and twice as time-consuming to produce as a black and white one.

6. Legends, marginal information and map use

In the map reading process one can discern between three phases: external identification, internal identification and map reading proper. External identification is the name of the process during which the map reader is made aware of the geographical framework of the mapped area and of the thematic nature of the map. Both geographical framework and map theme are usually mentioned in the map title. Internal identification is equal to the decoding of the legend. If there is a specific hierarchy in the characteristics discerned in the map, than the legend and the symbols used should highlight this hierarchy. An irritating custom that seems hard to eradicate, is the so-called number legend, in which numbers have been added to the symbols, which refer to another place where the relevant concepts are listed. Figure 20 provides an example of such a number-legend. It requires an extra step and consequently is an unnecessary burden on the reading process.

If one would state that all the information required for a proper reading and understanding of the map should be contained in the map margin, than we do not only refer to the title and the legend. More is required, for instance reliability diagrams or statements. But the marginal information is also intended for the map curator, who should be able to describe the cartographic documents properly, and transfer the relevant information to catalogues. The elements needed by the map curator would be bibliographical information such as an indication of the map author and map publisher. The publisher is usually mentioned, together with the place and year of publication in the impressum, a fixed sequence of place, publisher and year of publication.

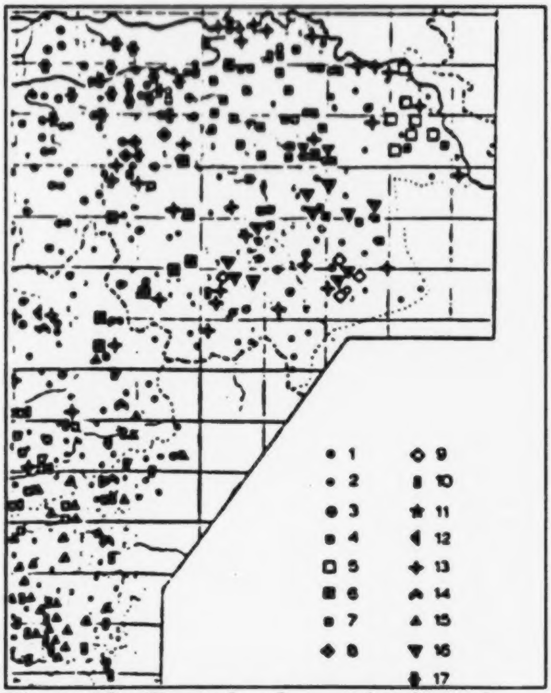

Figure 20 - Example of a number-legend.

Linguistic maps are being produced primarily in order to visualize the distribution of linguistic phenomena. The specific shapes of those areas is not inherently relevant: what should be relevant is their resemblance or conformity to other phenomena (see figure 21). Or it should be that the shapes are related to specific processes, like elongated shapes being related to transition areas, concave shapes related to rest areas, as opposed to convex areas related to expansion. But to base conclusions on the shapes of areas only would be a highly speculative activity.

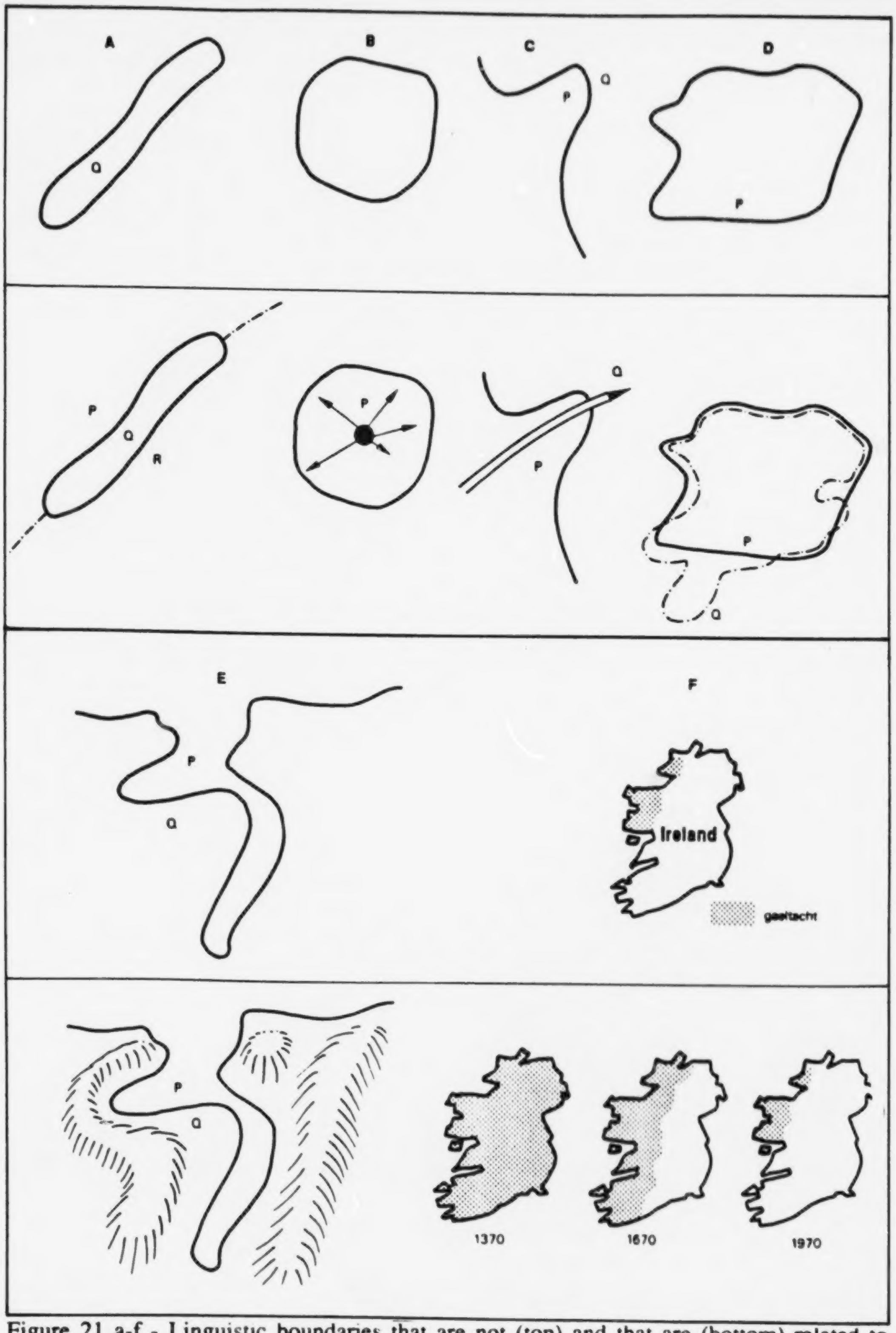
A
B
C
D
Q
P
Q
P
P
Q
R
P
Q
P
P
Q
E
F
P
Q
Ireland
gaeltacht
P
Q
1370
1670
1970

Figure 21 a-f - Linguistic boundaries that are not (top) and that are (bottom) related to other phenomena, such as a) transition zones; b) cultural centers; c) traffic infrastructure; d) administrative areas; e) relief; f) historical processes.

It is of course possible to visualize the shapes of areas for differents periods of time. This adds an extra dimension to the interpretation possibilities (figure 21f). Similarities in shape with other phenomena can be more useful in finding explanations. Language phenomena in Europa are characteristics of a sedentary population, and the location of this population is usually determined by terrain characteristics, such as heights (21e), vegetation (forests), soils (marshes, peat, moors) or political considerations and defense possibilities. The expansion of linguistic phenomena can be influenced by socio-economic or cultural factors: monasteries, fairs, administrative centers or traffic infrastructure. In order to enable such comparisons or correlations, the distribution patterns should be easily visualized on the map.

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'EASY GEOLINGUISTS' AND CARTOGRAPHERS

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University of Paris VIII

Linguistic mapping is permanently evolving because it must follow not only the progress of the linguists' analysis, but also the intervention of sociolinguists and scientists from other disciplines - geography, history, economics, politology, etc. - who, one after the other, are discovering the importance of language and the interaction between language and other phenomenon.

Starting from a stable vision of what is language, who uses it, and where, geolinguistics (before being known as such) produced a plethora of nineteenth century linguistic maps displaying the distribution of ethno-linguistic groups, side by side, in Europe or elsewhere. Languages - and even dialects - were well defined, precisely situated after thorough field studies, and their speakers easily numbered. The answer to the basic question was easily given:

WHAT language - or speech, dialect, etc. is used? Each speech form was known, studied through its lexical stock, its morpho-syntaxic structure, its oral and written literature; and its place in the linguistic classification was clear.

WHO spoke it? What population, wearing such name, of which amount of people, prospected and numbered: who meaning at least how much.

WHERE were these people living? In which towns, cities? Linguists with ethnographers have been inquiring down to each village and have brought a huge amount of testimonies about the way of speaking linked or not to other customs and behavioural variations.

In such a way, large scale maps showing precise lines were made showing the juxtaposition of various ethno-linguistic units. They often were of splendid colourful expressive designs. But what about static situations? And simple ones? The complication started with border areas, and a mixed population, and cities, where migrations brought various influx, delimiting ethnic wards. But there were simple means to show that also: mixed shadings, proportional shared circles, and some changes in scale to represent urban situations.

get closer to the speakers, the more one was discovering that it was impossible to put each of them in his linguistic place.

The first destablisation came from the new question:

WHEN, or since when, is the language spoken there?

The eruption of diachrony, say History, led to a dynamic vision, from language distribution, to language spread. The introduction of succession could be met by successive maps, or successive lines on the same map, or by the use of expressive, or expressionist, designs like arrows, etc. The difficulties were still limited.

But the most profound changes came with the next question:

HOW is the language spoken by the community and the individuals? Because, now, the answer was dealing with several languages, at the same (historical) time, in the same place, by the same people. Bilingualism, and further on, diglossia, were bringing the observer beyond spatial *juxtaposition*, or chronological *succession*, right to permanent *superposition* of uses, for instance, mother tongue, home speech, vehicular market intercourse expression, culture language, state language, foreign taught languages, international language, etc.

The graphic answer to that could not be as simple as on good old time maps. All the registers of semiology had to be sought to make visual sense of the complexity of linguistic behaviour of ethnic groups and of persons.

And, then, a last question brought geolinguistics beyond innocent, or presumed innocent description toward explanation:

WHY such languages are spoken?

Any map, as any speech, discourse, account, story, even constructed with the most impartial intention, is never integrally objective, at least in human or social science, because it is a construction of its author, who has chosen the materials, the way of building, and the whole plan of the work. Because it is a demonstration, outside exact deductive sciences, even if it is not meant to imply an explanation, the map suggests one by the choice of the contextual references and of the graphic means, stressing some aspects and ignoring others.

This is all the more so when the author wants to prove something to express clearly a relation of causality. Maps are messages, and, as messages, they could become weapons. In relations of dominance, which are frequent, if not universal, between languages, when you only put on a map the language of the state and not the vernacular, as do most of linguistic maps at a small scale, you serve the state interest. By contrast, if you only show the mother tongues, and not the culture, or official languages, you plead for the oppressed.

Any map is based on a selection of facts to be shown and of the means to show them. Either the author does not know really what he/she does - as many people who do not master cartography or graphic semiology - and the awkward result is far from what it could be, and gives a wrong image of realities. Or the author has a fairly good training and aptitude in graphic represenation, and he/she chooses, in the wide scale of possible facts and means, those who serve his own idea of the subject of the map.

Such are the risks of geolinguistics, they are far from the simple and easy representations of last century.

And, beside that, we should add that among the various thousands of spoken tongues in our present common human being, only a small minority (some hundred?) are well known, precisely delimited linguistically and geographically. So, in many cases, the language map designer has only a partial answer even to the first questions WHAT?, WHO?, WHERE? And, before we answer to WHEN? HOW? and WHY? he/she has, anyway, to draw maps. And, please, exact, complete, intelligble and nice ones!

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REGIONALISM AND ETHNIC DISTRIBUTION IN TODAY'S HUNGARY

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The situation of regionalism seems to be evolving in Hungary because of internal political changes that began a long time ago, and accelerated in the last couple of years, and also because of the changed conditions in relations with the neighbouring countries. The evolution of the democratising process, and the reconstruction of the power structure allowing representation to come from below through democratic elections, the strengthening of the representation of local interests, the appearance of local authority as a factor, the reformation of the financing system, the decentralized model, the gradual development of the self-governmental system are all reinforcing regionalism. All the mistakes and omissions made, which accumulated during the operational period of the centralised power structure produce their effect in the same direction, and so does the will to search for resolutions, for corrections.

The necessity of a regional attitude became obvious on the most elementary level of territorial development , among the settlements. It became generally accepted, that practically the only kind of relational form until now, the hierarchical order, had to be supplemented by a number of elements of the horizontal relation-system. In spite of the still rather strong resistance, the settlement/local/financial basis of regional development being built on horizontal relation-systems are gradually appearing.

In the new situation the contradiction, which has been present between the units at various levels, different in their origins and functions, the counties and configurational units which are the results of the development of the regional division of labour, inevitably deepens. The essence of the matter is the following. While the counties, which consist of heterogenous configurational elements, have naturally complex interests and structures, their representative functions are incapable of operating in a productive way because of their heterogenous nature. This merges the regional interests into one another. Meanwhile the homogenous interests of configurational units are not represented by an institutional system, and so they can either become averaged till they cannot be identified any more, or they fall to pieces. In brief, the unit which has an identifiable interest does not have an appropriate representation, while where the representation of interests is present, there is nothing to be represented. The best example of this contradiction is the Mid-Tisza Region (Beluszky, p.1981). The area for several reasons is in a disadvantageous situation, it is a homogenous configurational unit, and its territory is divided into four counties. Hence the interests of this region have never been realised beyond the sphere of scientific research. In the present situation the effort to eliminate, basically reconstruct, the county system, and to substitute it with a certain kind of regional system is getting stronger, however it is very difficult to predict the chances of this effort turning out to be successful. A prediciton is especially difficult in a multi-party system during the learning/re-learning phase of the practice of democracy. Now we have admistrative regions above the county-level, but they are only quasi-regions.

In the last few decades following the "policy of possibilities", we gradually improved our relationship with Yugoslavia, and we were looking for the possibilities of co-operation in the border-areas with our neighbours. For years we worked hard on creating an exemplary relationship with neutral Austria, exemplary in the sense that it happened between two countries with different social-systems. So we can say that there was a good reaction to the new possibilities of "glasnosty" and "perestrojka" in Hungary. We strengthened our efforts to become economically and politically independent form the Soviet Union, to create a Polish-Czechoslavakian-Hungarian block which could co-operate more intensely within the Comecon, and to intensify the Austrian-German relations. We engaged more and more in the regional actions of the Alp-Adriatic Work Team. We expressed our readiness to regional co-operation with our neighbouring states several times, we proved our openess, in relation to either the great region and the whole of Europe, or to other parts of the world. To be open is a national interest of Hungary: there cannot be a change in the world, no matter how sudden or profound, which would find Hungary unprepared for co-operation (Figure 1).

After the change of our social system we are ready to use these newer possibilities in international co-operation, with the newly independent Slovenia, Croatia or Ukraine (Figure 2).

Given our interest in portaying the geolinguistic and ethnic pattern of contemporary Hungary the next section provides a general survey of the most recent census evidence.

1. General Survey

Concerning the ethnic composition, the 1990 National Census, just as the one in 1980, gave information only on the villages. It is favourable that these data are given on the same villages, so comparative analysis can be made, over the decade. The data concerned the nationality and the mother tongue and included such summaries as, whether the population speaks the given language. We can analyse the most favourable places for minorities, the population - regarded as minorities on the basis of the combinations of different criteria - and their place of residence. It is only regrettable that we do not have basic data concerning the towns.

In Hungary there are 16 villages, where the overwhelming majority of the population can be characterized as nationalities on the basis of the combinations of the census criteria. It is interesting that apart from these 16 villages, 7 Croatian, 5 Slovenian, 2 German and only 1 Slovakian and 1 Romanian, a further 43 Hungarian villages have an absolute (70-75%) majority of nationalities, comprising 16 German, 15 Croation, 10 Slovakian, 1 Serbian and 1 Romananian. It is considerable, that from the 500 investigated villages in about 100 settlements if only one minority person lives there, the villages are regarded as minority, and in another 200 villages the rate of minorites is under 1%. The number of German inhabited villages is the highest (457), then the Slovakian, Romanian, Croatian, Serbian and Slovenian settlements follow. Considerable differences can be found concerning different nationalities, according to the various rate of the minorities (Table 1-2).

2. Germans

In absolute figures the Budapest agglomeration, Buda-side settlements, and villages connected to them, have outstanding values. The biggest German community with 3,500 inhabitants lives in Pilisvörösvár. In Baranya county Mecseknádasd and Bóly have the biggest German minority. Concerning the proportion (disregarding some villages), the settlements of Baranya and Tolna county play the leading role (Table 3).

The cartodiagram, showing the territorial position of German inhabited settlements, gives us several opportunities for detailed investigation (Figure 3).

3. Slovakians

Tótkomlós has the biggest Slovakian minority among the Hungarian villages with almost 3,000 inhabitants. Apart from Tótkomlós, two South-Eastern Hungarian settlements are among the first 10, while the other 7 constitute part of the settlement belt situated North-West of Budapest. We have only one village (Komlóska), where the overwheming majority is Slovakian.

From the Zemplén Hills further villages are in the category above 50%, while some from the Pilis Hills and from Békés county are representing Slovakian populations (Table 4).

If we represent the villages having the biggest proportion of Slovakian minorities, we can see that besides the group of villages situated round Budapest, the Zemplén and Békés groups are remarkable and some border settlements are worth mentioning (Fig.4)

4. Romanians

There are two Hungarian settlements (Kétegyháza and Méhkerék), where the number of the Romanian minority is above 2,000. In Elek which is inhabited by three different nationalities, almost 1,000 Rumaninans live, while in other settlements we can estimate the number of Romanians as a few hundred.

It is considerable that all of the ten settlements - with the exception of Budakeszi - are situated along the Romanian-Hungarian border. The situation is similar if we look at the proportion of the Romanian minority; in this respect it is worth mentioning that 90% of the inhabitants of Mehkerek are Romanian (Table 5).

The map showing the regional situation of the settlements with the highest proportion of the Romanian inhabitants (Figure 5), apart from border-region settlements, shows but a few places with smaller Romanian concentration.

5. Croatians

In all of the ten villages of the largest Croatian population more than 500 Croatians live. In three cases of these the number of the Croatians is over 1,000. It is significant that the Croatians live in ethnically homogenous settlements: the proportion of the Croatians is over 50%, in fact, 70% in many settlements (Table 6).

The settlements that have the highest proportion of Croatians are stiuated on the border of Hungary and Croatia-Slovenia, and partly along the Hungarian-Austrian border. On them and on the Slovenes would have been based Benes, after World War I, ie. the corridor that would have linked the two newly formed Slavic countries, Czechoslavakia and the Serbian-Croatian-Slavonian Kingdom between Hungary and Austria. Although this corridor is not at all a homogenous slav-ethnic region (Figure 6).

6. Serbians

There are fewer Serbians in Hungary than is often thought by the public, quite often accepting the official "Yugoslavia" nomenclature, mixing Serbians and Croatians. Most of the Serbians live in Tököl, though their population remains below half a thousand even there. Their rate is the highest in Lórév, while they represent quite a modest rate in other settlements (Table 7).

The feature of the regional situation of the Serbians in Hungary is that they are concentrated in a band reaching North along the Danube, especially around Budapest, the angle of the Tisa and the Maros, and Southern Baranya contain further concentrations (Figure 7).

7. Slovenes

Most can be found in Felsoszőlnők, but some smaller villages of the Orség/Vendcountry are inhabited by Vends too. The proportions are high there, but elswhere we can find only some scattered Slovene ethnic groups with small populations (Table 8).

The cartogram showing the regional situation of the settlements with the highest rate of Slovene population (Figure 8), shows us the regional concentration of the Slovenes in Hungary and also the fact that the number of the Slovene population living in other parts of the country is negligible.

8. Gypsies

Actually no-one knows the proper number of Gypsies in Hungary. The data of the National Census - while it is based on a personal voluntary declaration, and it is not easy to undertake the name Gypsy - do not reflect the real situation. We are facing the same situation with certain surveys and the often exaggerated data of the recently formed Gypsy organizations.

One thing is sure: the number of Gypsies is increasing quickly, their proportion in the decreasing population of the country is increasing as well. Their territorial distribution is motivated by new possibilities of residing, although (Figure 9), they tend to accumulate in the disadvantaged regions. The North-East and the South-West territories of the country show us a characteristic picture, where the proportion of their residence is higher and a belt between the two regions where hardly any Gypsies settled down.

Table 1.: Number of the settlements with populations that can be considered minorities based on the combination of definitions, according to the rate-categories of the minorities (1990).

	MINORITY						MAJORITY		TOTAL
	Small proportion		Middle proportion		Pregnant				
Nationality	minimal (1 person)	accidental (<1%)	palpable (1-5%)	considerable (5-10%)	important (10-25%)	definite (25-50%)	absolute (50-75%)	overwhelming (>75%)	
Slovakian	77	155	19	13	26	15	10	1	316
Romanian	54	168	71	5	4	2	1	1	306
Croatian	70	93	49	9	12	10	15	7	265
Serbian	97	114	34	5	1	-	1	-	253
Slovene	42	28	2	-	-	1	-	5	78
German	7	67	101	92	118	54	16	2	457

Table 2.: Division of the concerned settlements among the rate-categories of minorities

	MINORITY						MAJORITY		TOTAL
	Small proportion		Middle proportion		Pregnant				
Nationality	minimal (1 person)	accidental (<1%)	palpable (1-5%)	considerable (5-10%)	important (10-25%)	definite (25-50%)	absolute (50-75%)	overwhelming (>75%)	
Slovakian	24.4	4e.1	6.0	4.1	8.2	4.7	3.2	0.3	100.00
Romanian	17.6	54.9	23.2	1.7	1.3	0.7	0.3	0.3	100.00
Croatian	25.4	35.1	18.5	3.4	4.5	3.8	5.7	2.6	100.00
Serbian	38.3	45.1	13.4	2.4	0.4	-	0.4	-	100.00
Slovene	53.8	35.9	2.6	-	-	1.3	-	6.4	100.00
German	1.5	14.7	22.1	20.1	25.8	11.8	3,5	0.5	100.00
Total	20.7	37.3	16.5	7.5	9.6	4.9	2.6	0.9	100.00

Table 3.: Settlements with the highest rate and number of German population /1990/

According to proportion			According to absolute number		
Number	Settlement	Rate /%/	Number	Settlement	Persons
1.	Ófalu	88,0	1.	Pilisvörösvár	3.462
2.	Óbánya	79,1	2.	Csolnok	1.672
3.	Liptód	72,3	3.	Hajos	1.581
4.	Görcsönydoboka	71,5	4.	Budakeszi	1.275
5.	Vaskeresztes	70,6	5.	Nemesnádudvar	1.274
6.	Vértestolna	69,2	6.	Mecseknádasd	1.266
7.	Mecseknádasd	68,4	7.	Solymár	1.184
8.	Szür	60,7	8.	Bóly	1.176
9.	Hásságy	58,8	9.	Taksony	1.087
10.	Szakadát	58,5	10.	Tarján	1.083

Table 4.: Settlements with the highest rate and number of Slavonian population /1990/

According to proportion			According to absolute number		
Number	Settlement	Rate /%/	Number	Settlement	Persons
1.	Komlóska	77,2	1.	Tótkomlós	2.819
2.	Vágáshuta	71,7	2.	Pilisszentkereszt	1.325
3.	Nagyhuta	71,1	3.	Kesztölc	1.035
4.	Ősagárd	69,7	4.	Piliscsév	1.012
5.	Répáshuta	65,5	5.	Pilisszentlászló	986
6.	Pilisszentkereszt	65,1	6.	Tardosbánya	695
7.	Sámsonháza	60,7	7.	Sárisáp	606
8.	Pilisszentlászló	58,9	8.	Csabacsüd	521
9.	Alsóregec	53,1	9.	Pilisszentlászló	484
10.	Kardos	52,5	10.	Kardos	478

Table 5. : Settlements with the highest rate and number of Romanian population /1990/

According to proportion			According to absolute number		
Number	Settlement	Rate /%/	Number	Settlement	Persons
1.	Méhkerék	90,0	1.	Kétegyháza	2.118
2.	Bedő	52,0	2.	Méhkerék	2.033
3.	Kétegyháza	46,9	3.	Elek	993
4.	Pusztaottlaka	35,9	4.	Magyarcsanád	355
5.	Magyarcsanád	20,9	5.	Körösszegapáti	211
6.	Körösszakál	18,0	6.	Bedő	196
7.	Elek	17,8	7.	Pusztaottlaka	178
8.	Körösszegapáti	17,7	8.	Körösszakál	157
9.	Kalaznó	9,5	9.	Budakeszi	145
10.	Váralja	6,3	10.	Lökösháza	125

Table 6.: Settlements with the highest rate and number of Croatian population /1990/

According to proportion			According to absolute number		
Number	Settlement	Rate /%/	Number	Settlement	Persons
1.	Felsőszentmárton	90,1	1.	Tótszerdahely	1.166
2.	Tótszerdahely	87,7	2.	Kópháza	1.164
3.	Tótszentmárton	83,1	3.	Felsőszentmárton	1.124
4.	Harda	80,2	4.	Murakeresztúr	995
5.	Szentpéterfa	78,6	5.	Szentpéterfa	851
6.	Molnári	77,0	6.	Tótszentmárton	834
7.	Szentborbás	76,8	7.	Molnári	654
8.	Drávasztára	73,5	8.	Bezenye	567
9.	Potony	73,4	9.	Hercegszántó	560
10.	Tótújfalu	72,5	10.	Horvátzsidány	533

Table 7.: Settlements with the highest rate and proportion of Serbian population /1990/

According to proportion			According to absolute number		
Number	Settlement	Rate /%/	Number	Settlement	Persons
1.	Lórév	59,1	1.	Tököl	431
2.	Bátya	11,3	2.	Bátya	272
3.	Hercegszántó	8,4	3.	Pomáz	210
4.	Szigetcsép	7,0	4.	Hercegszántó	209
5.	Tököl	6,8	5.	Lórév	185
6.	Deszk	6,6	6.	Deszk	183
7.	Újszentiván	6,2	7.	Dusnok	159
8.	Lippó	5,4	8.	Szigetcsép	153
9.	Dusnok	4,6	9.	Budakalász	127
10.	Magyarcsanád	4,6	10.	Harkány	120

Table 8.: Settlements with the highest rate and number of Slovene population /1990/

According to proportion			According to absolute number		
Number	Settlement	Rate /%/	Number	Settlement	Persons
1.	Felsőszölnök	92,7	1.	Felsőszölnök	701
2.	Kétvölgy	89,4	2.	Apátistvánfa	368
3.	Apátistvánfa	84,0	3.	Szakonyfalu	296
4.	Orfalu	80,5	4.	Alsószölnök	186
5.	Szakonyfalu	76,7	5.	Kétvölgy	143
6.	Alsószölnök	41,2	6.	Orfalu	62
7.	Bátya	2.0	7.	Bátya	48
8.	Rönök	1,9	8.	Hegyeshalom	13
9.	Bonnya	0,5	9.	Rönök	9
10.	Horvátlövő	0,5	10.	Katymár	7

Figure 1 The possible areas of intensive regional cooperation between Hungary and its neighbours

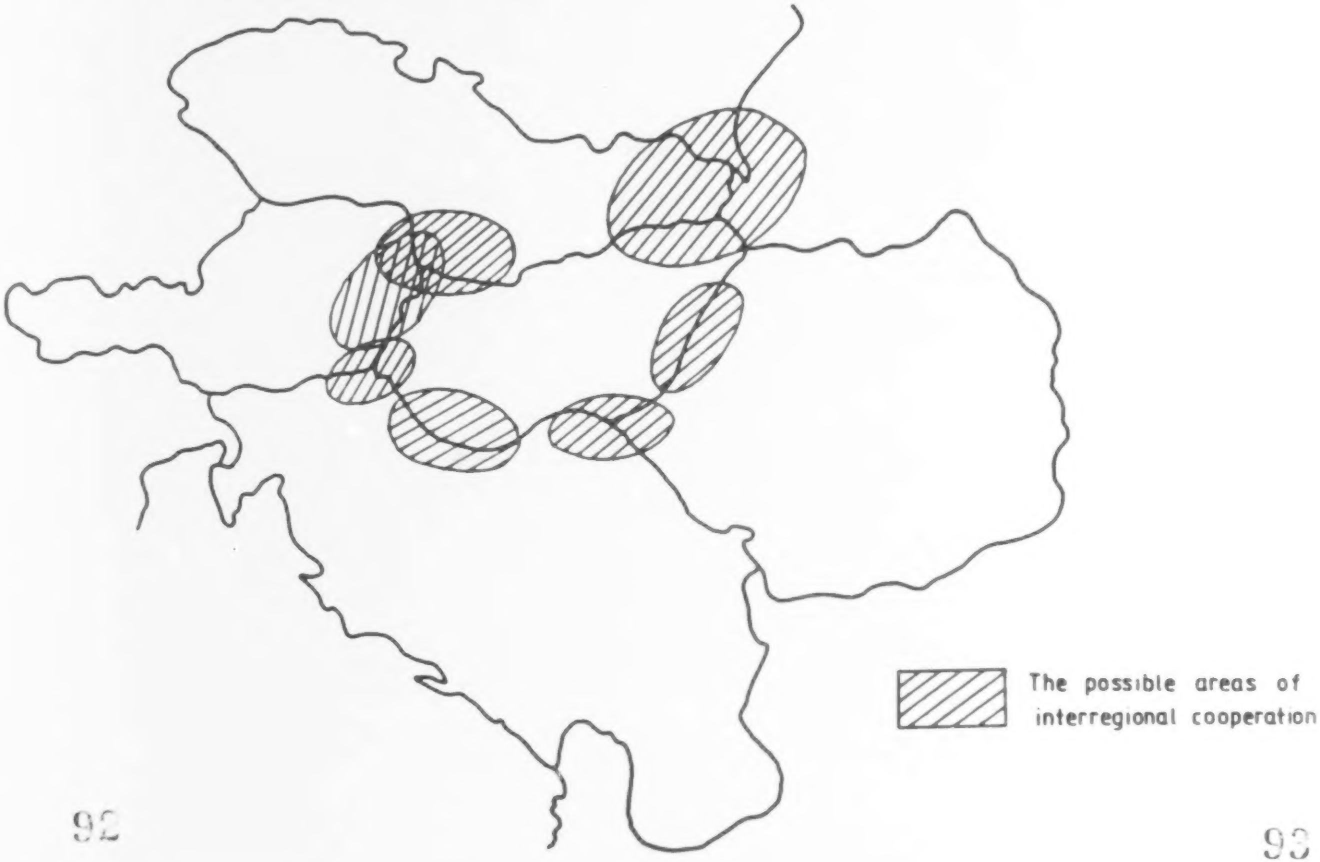

▨ The possible areas of interregional cooperation

Figure 2 The Carpathian - Tisa Region

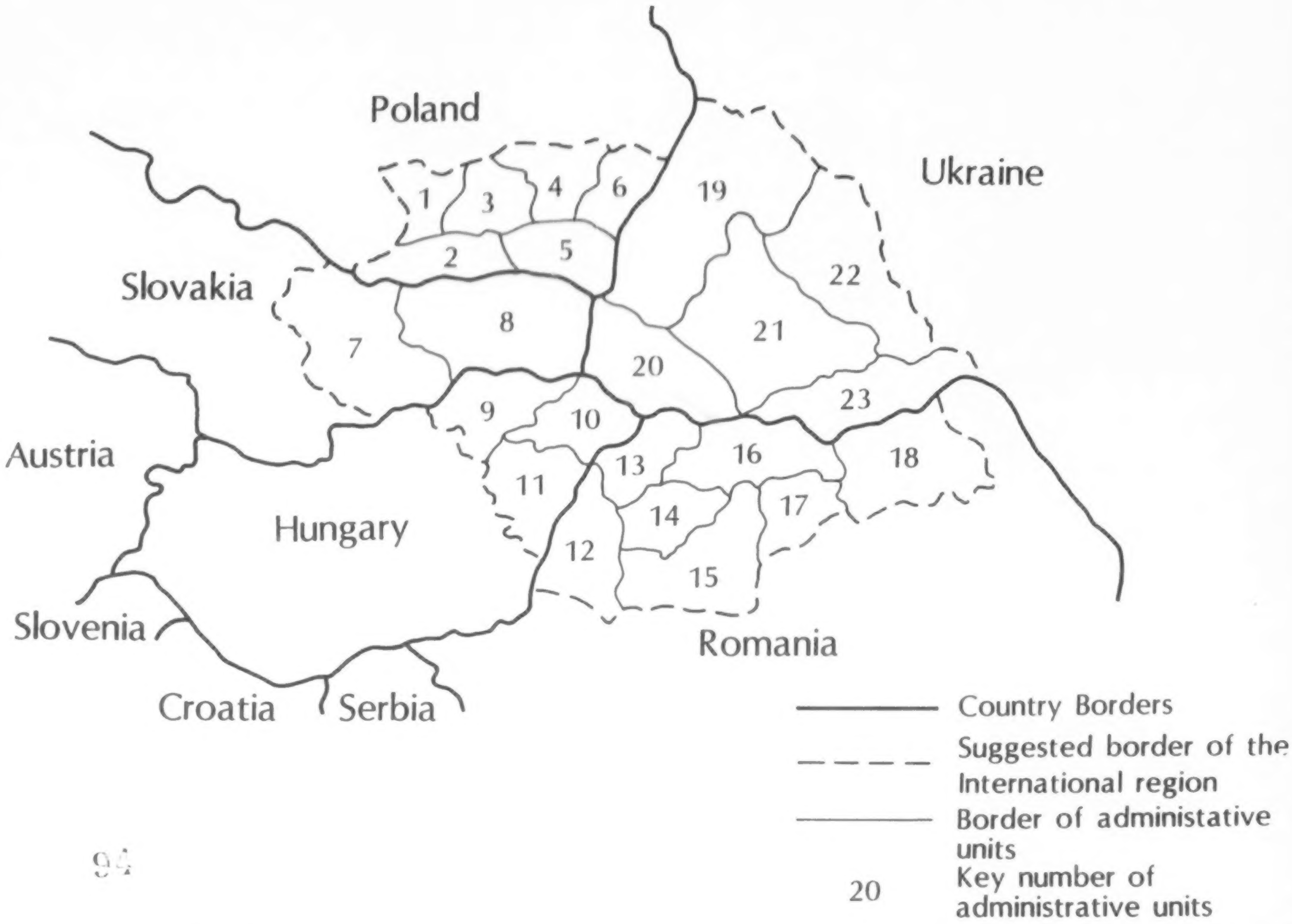

Poland
Ukraine
Slovakia
Austria
Hungary
Slovenia
Croatia
Serbia
Romania
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
Country Borders
Suggested border of the International region
Border of administative units
20 Key number of administrative units

Figure 3

GERMAN

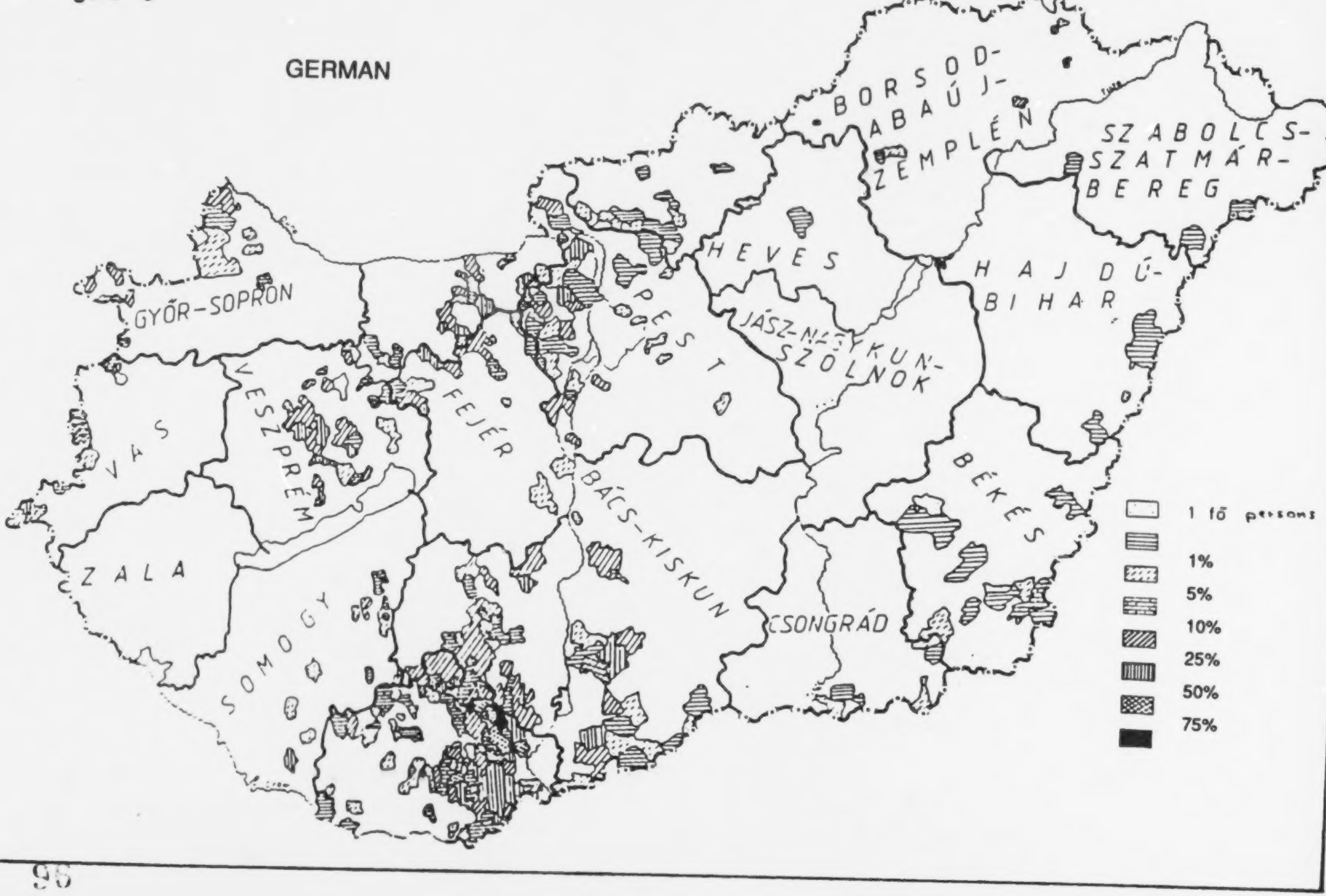
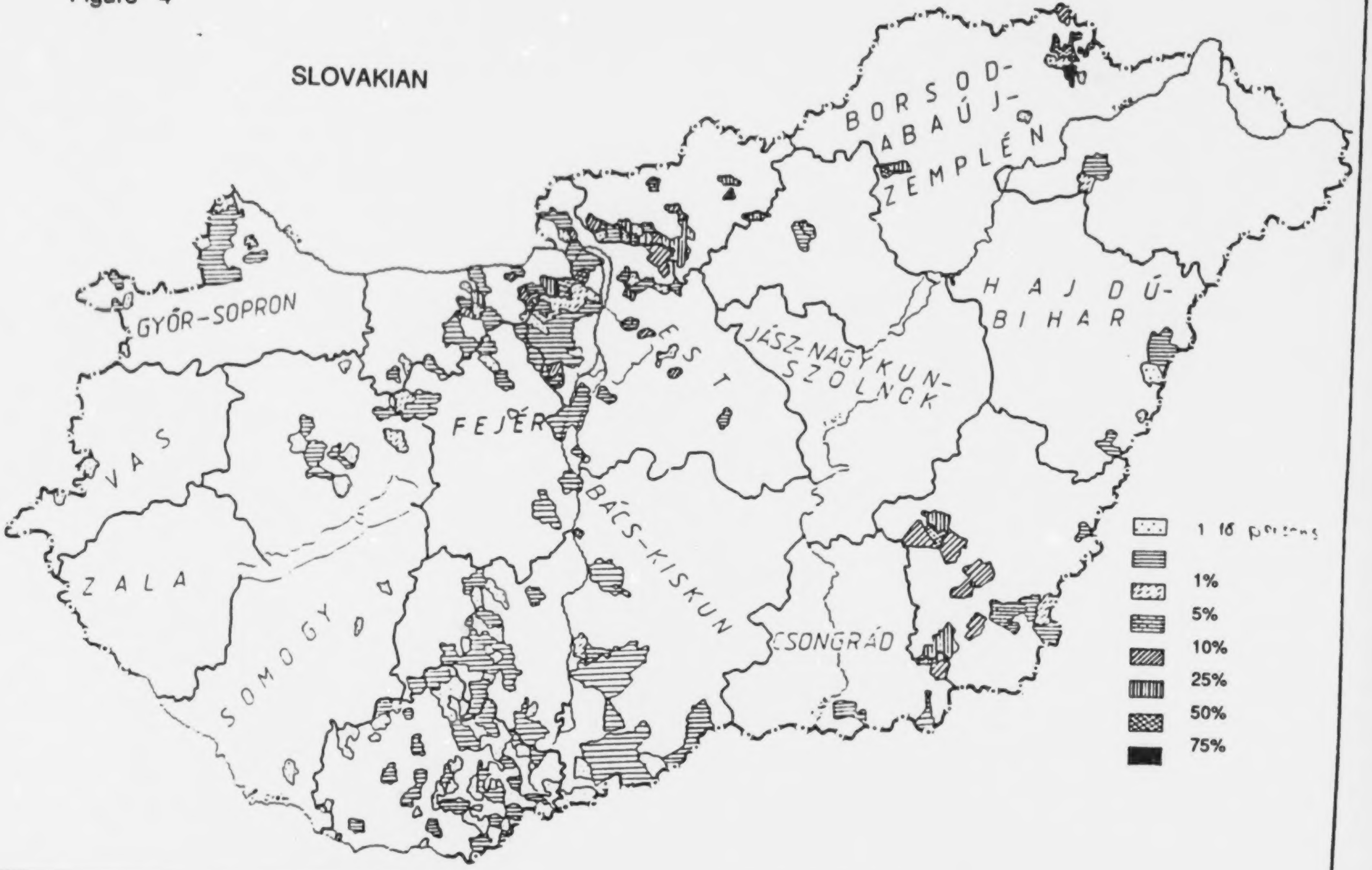

BORSOD-ABAÚJ-ZEMPLÉN
SZABOLCS-SZATMÁR-BEREG
GYŐR-SOPRON
HEVES
PEST
HAJDÚ-BIHAR
JÁSZ-NAGYKUN-SZOLNOK
VESZPRÉM
FEJÉR
VAS
BÉKÉS
BÁCS-KISKUN
ZALA
SOMOGY
CSONGRÁD
1 fő persons
1%
5%
10%
25%
50%
75%

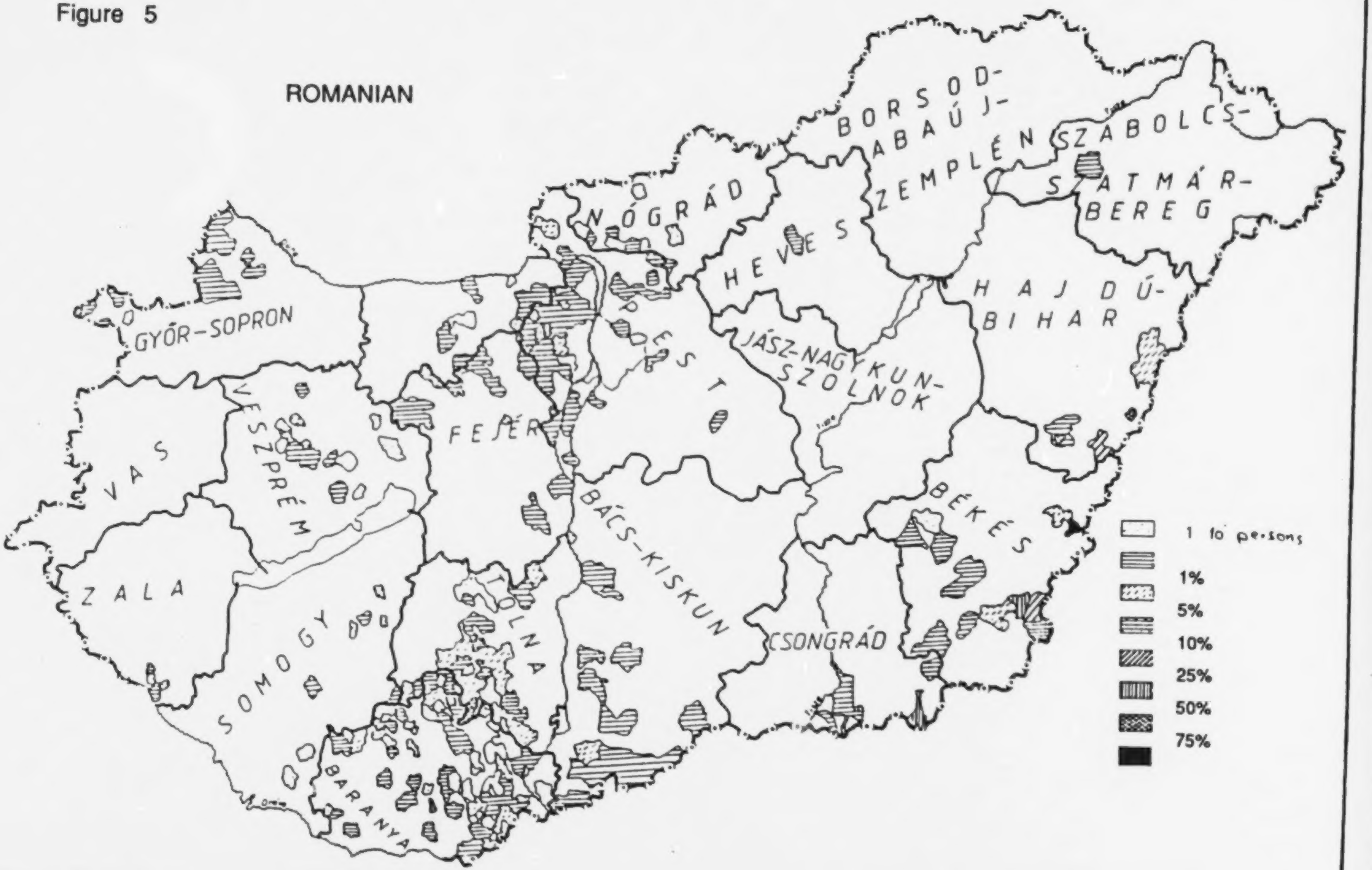
Figure 4


SLOVAKIAN

GYŐR-SOPRON
VAS
ZALA
SOMOGY
FEJÉR
PEST
BÁCS-KISKUN
BORSOD-ABAÚJ-ZEMPLÉN
HAJDÚ-BIHAR
JÁSZ-NAGYKUN-SZOLNOK
CSONGRÁD
1 10 persons
1%
5%
10%
25%
50%
75%

Figure 5

ROMANIAN


GYŐR–SOPRON
VAS
ZALA
VESZPRÉM
SOMOGY
BARANYA
FEJÉR
TOLNA
NÓGRÁD
PEST
BÁCS-KISKUN
HEVES
BORSOD-ABAÚJ-ZEMPLÉN
SZABOLCS-SZATMÁR-BEREG
HAJDÚ-BIHAR
JÁSZ-NAGYKUN-SZOLNOK
BÉKÉS
CSONGRÁD
1 10 persons
1%
5%
10%
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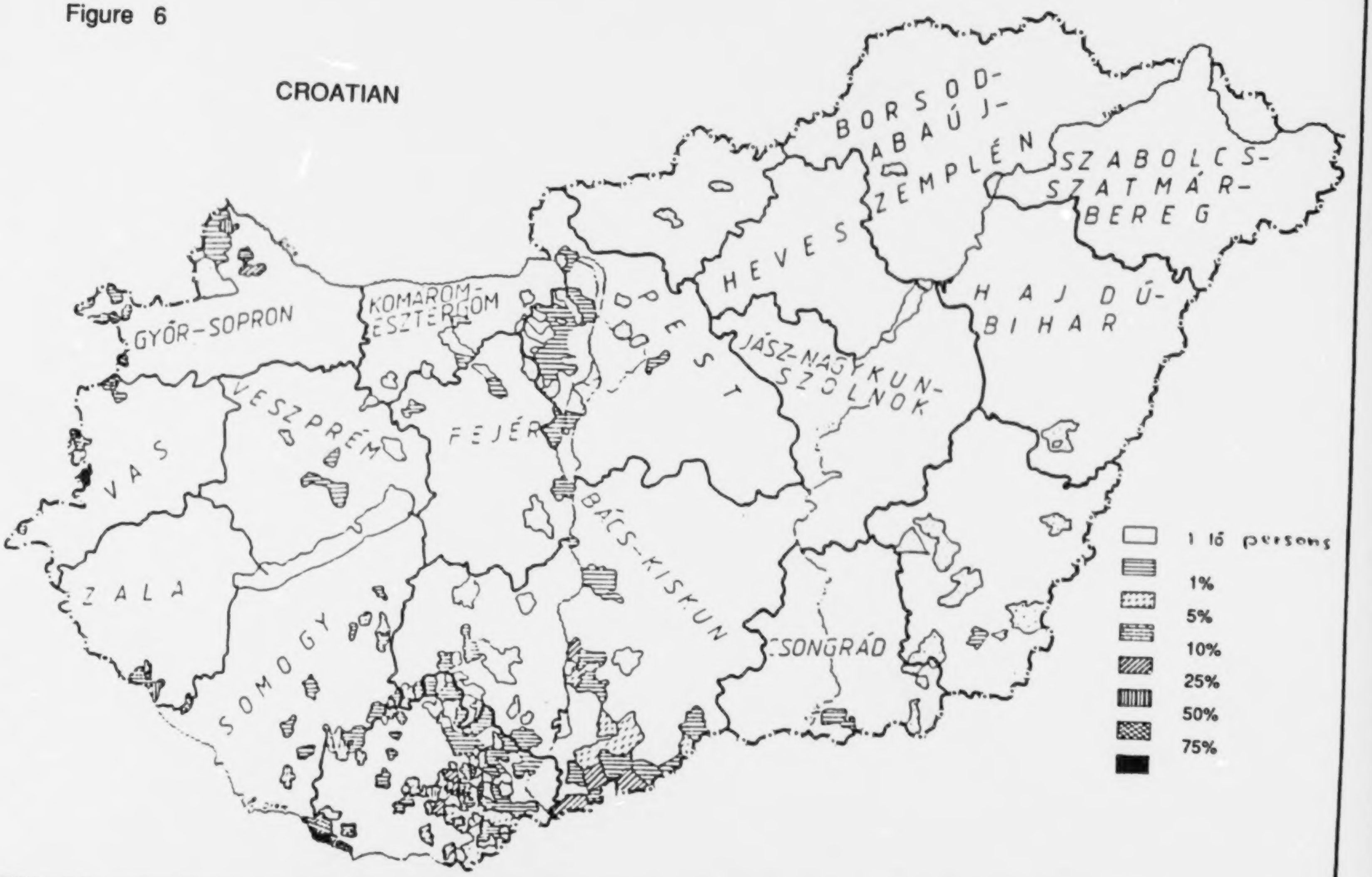
50%
75%

Figure 6



CROATIAN

BORSOD-
ABAÚJ-
ZEMPLÉN
SZABOLCS-
SZATMÁR-
BEREG
HEVES
PEST
KOMÁROM-
ESZTERGOM
GYŐR-SOPRON
JÁSZ-NAGYKUN-
SZOLNOK
HAJDÚ-
BIHAR
VESZPRÉM
FEJÉR
VAS
BÁCS-KISKUN
ZALA
SOMOGY
CSONGRÁD
☐ 1 10 persons
▤ 1%
▒ 5%
▤ 10%
▨ 25%
▥ 50%
▩ 75%
■

Figure 7

SERBIAN

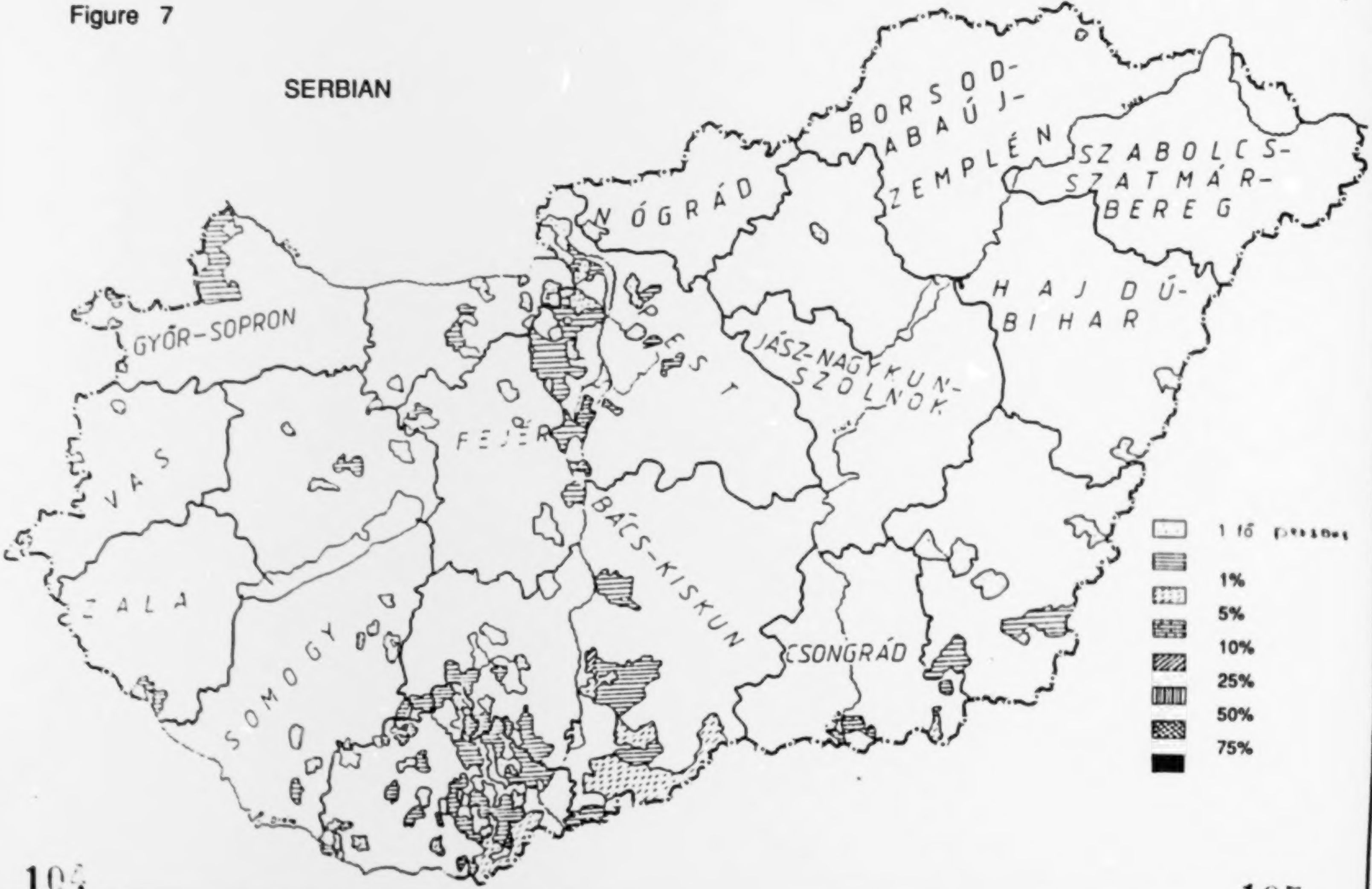

BORSOD-ABAÚJ-ZEMPLÉN
SZABOLCS-SZATMÁR-BEREG
NÓGRÁD
GYŐR-SOPRON
HAJDÚ-BIHAR
PEST
JÁSZ-NAGYKUN-SZOLNOK
VAS
FEJÉR
BÁCS-KISKUN
ZALA
SOMOGY
CSONGRÁD
1-16 persons
1%
5%
10%
25%
50%
75%

Figure 8

SLOVENE

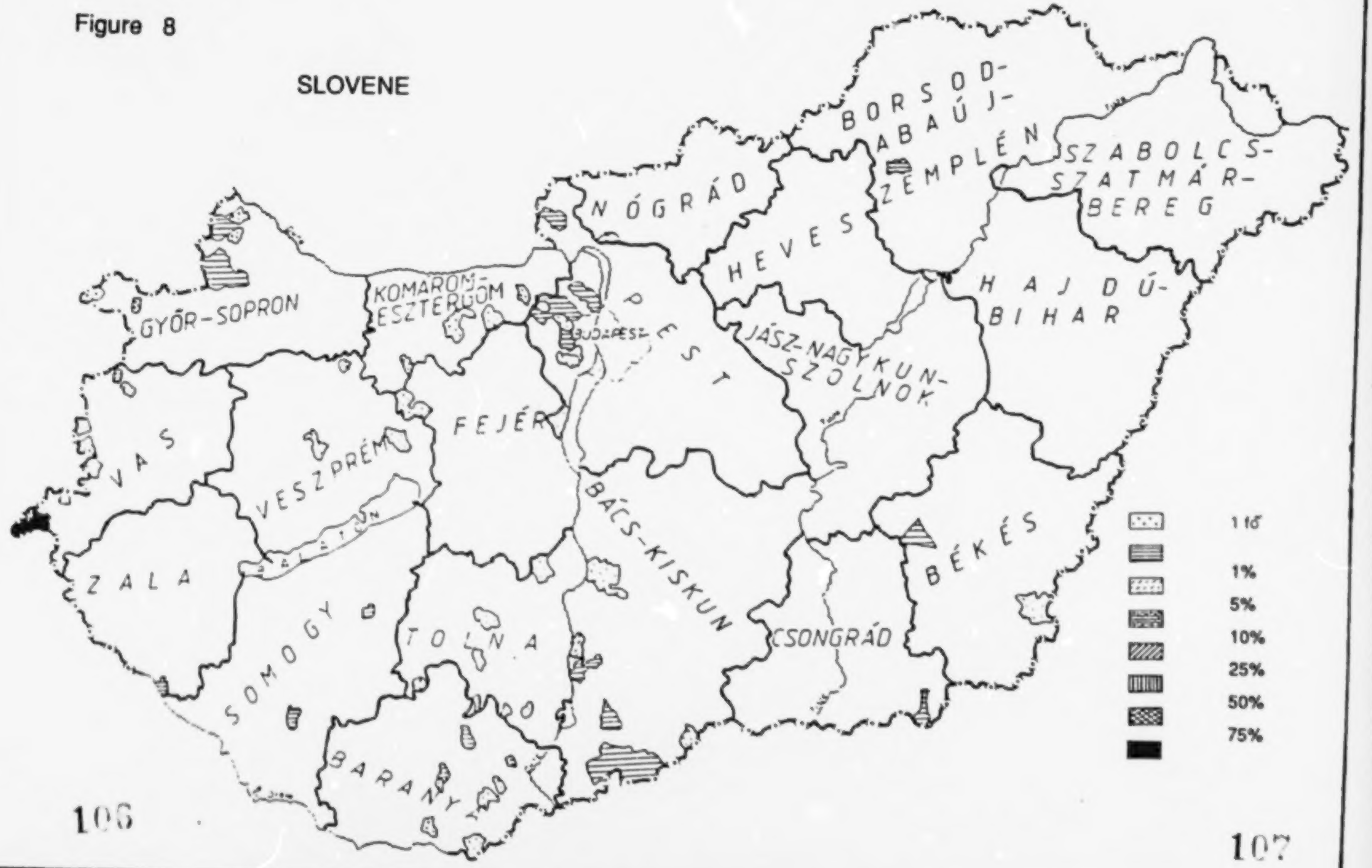
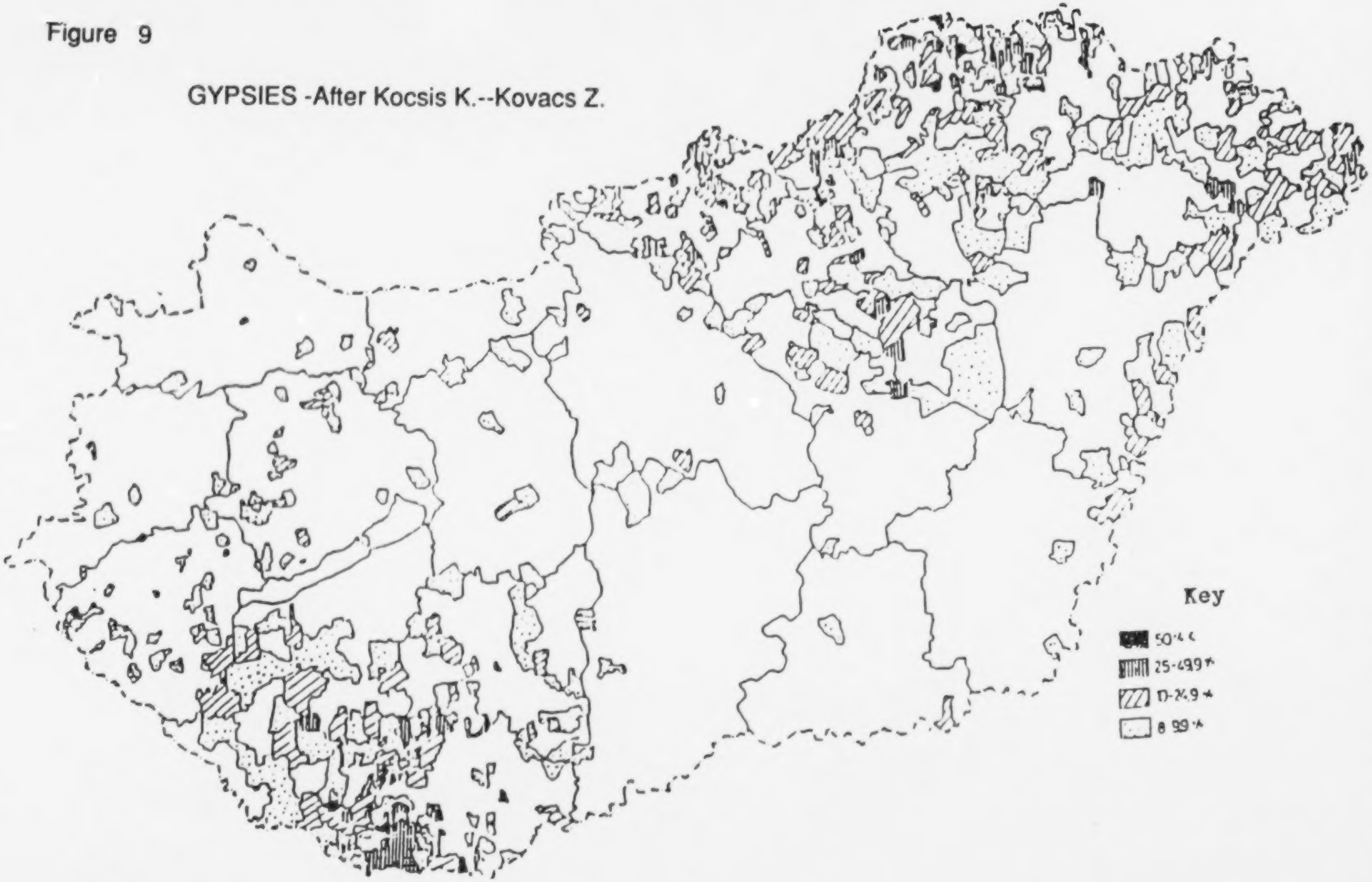

BORSOD-ABAÚJ-ZEMPLÉN
SZABOLCS-SZATMÁR-BEREG
NÓGRÁD
HEVES
HAJDÚ-BIHAR
GYŐR-SOPRON
KOMÁROM-ESZTERGOM
BUDAPEST
PEST
JÁSZ-NAGYKUN-SZOLNOK
VAS
VESZPRÉM
FEJÉR
BALATON
BÁCS-KISKUN
ZALA
SOMOGY
TOLNA
BÉKÉS
CSONGRÁD
BARANYA
1 fő
1%
5%
10%
25%
50%
75%

Figure 9

GYPSIES -After Kocsis K.--Kovacs Z.


Key
50 % <
25-49.9 %
10-24.9 %
8 99 %

PUTTING REGIONAL IDENTITY ON THE LANGUAGE MAP: SOME REFLECTIONS ON RECENT DEVELOPMENTS IN SOUTH AFRICA

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Division: Socio-Cultural Dynamics
Human Sciences Research Council

1. A TIME OF CHANGE IN SOUTH AFRICA

On the 2nd of February 1990 the South African State President, Mr F.W. de Klerk in his opening address in parliament announced far-reaching changes which would, in effect, bring to an end the era of apartheid. In the past two-and-a-half years the fact that the change of direction in South Africa is substantial and for real, became general knowledge.

The rules of the political game and its very framework were suddenly changed on 2 February 1990. New rules and a new demarcation of the playing field will have to be devised by all the parties together. This difficult task has commenced by way of CODESA, the multi-party Conference for a Democratic South Africa which started in December last year. In essence, the new approach in the country is one which stresses the importance of a non-racial democracy. The emphasis is now on negotiating a new democratic constitutional dispensation, guaranteeing adequate constitutional rights for all South Africans and a justifiable Bill of Rights.

Some of the thorny issues which earlier on complicated the negotiation process and which are of relevance for the discussion, are the striving for self-determination amongst certain population groups, the implications of democracy and majority rule, and, lastly, the principle of regionalism with all the contentious political questions that it raises. These different issues will be referred to in the course of this discussion.

2. THE COMPLEXITY AND ACCOMMODATION OF SOUTH AFRICA'S PLURALISTIC SOCIETY

The complexity of the South African pluralistic society does not primarily lie in the wide variety of language and culture groups which are present in the country. There are several other African countries with more language groups than South Africa with its eleven major groups. In Zambia for instance, there are more than 40 languages, Ghana has roughly 45 languages, radio programmes are broadcast in 18 local languages in Uganda, and Nigeria with "hundreds of different vernaculars" is one of the most multilingual countries in Africa (Schuring, 1991).

The cultural heterogeneity in South Africa is a complex matter for several other reasons. Some of these are:

(i) Three divergent cultural streams - originating in Africa, the West and the East - underlie the variety of the country's languages as shown in Table 1. The largest stream, with more than 16 million speakers in the 1980 census, is that of African origin. The second stream consists of approximately 8 million people with their linguistic and cultural roots firmly in the Western world. The third and smallest stream (about one million in number) is of Eastern descent.

(ii) There are two major nationalisms underlying the cultural diversity in the country. As a source of potential conflict, this cultural diversity comprises a black nationalism and a white (predominantly Afrikaner) nationalism. As Mr Ismail Omar, a member of South Africa's Presidents' Council recently stated, these two nationalisms can either work in conflict with each other at the expense of all South Africans, or in confluence in the building of a new nation (Omar, 1991).

(iii) At the moment Afrikaans and English are the two official languages of the country. A strong movement to promote the idea of English as a binding language for the whole country and significant signs that Afrikaans-speakers take a firm stand for the maintenance of the official status nation-wide also of their language, typifies the language situation at the moment.

A characteristic of the South African language situation is that there are certain geographical areas where each of the eleven most-used mother tongues is the dominant home language. This can clearly be seen from the language map, Figure 1, on *Dominant Home Language per district in South Africa, 1980.* (cf. Language Atlas of South Africa, p.55). These eleven languages are Afrikaans and English (which, as official languages, are also fairly widely spoken across the country), and nine African languages: (in alphabetical order) Ndebele, Northern Sotho, Siswati, Southern Sotho, Tsonga, Tswana, Venda, Xhosa and Zulu.

Purely on face-value the official recognition of language regions (cf. the language map, Figure 1) as administrative units may seem a possible solution for accommodating cultural diversity in South Africa. However, the topic of regionalism is currently a source of heated political debate in South Africa, and language is but one aspect that crops up in this debate. The debate on regionalism will be discussed in the next section of this paper.

Except for the seemingly practical solution offered by regionalism to accommodate cultural diversity, one may ask what the different main theoretical options are for coping with cultural complexity in a country. The options fall into two general categories: recognition of pluralism or else the striving towards assimilation.

In the case of an assimilation model in South Africa, English as a language and as a culture could be fostered as the dominant culture (so-called Anglo-conformity), or a melting-pot effect could be encouraged with a loss of identity for the different main language groups.

Cultural pluralism allows for the continuation of distinct groups. In South Africa, there is wide support for the recognition in one way or another of a variety of languages. The African National Congress, for instance, advocates a language policy recognizing eleven languages (Afrikaans, English and nine indigenous African languages) as official languages. Gerard Schuring, one of the foremost sociolinguists in the country, proposes that every regional and local authority should have the right to choose one or more languages besides English and/or Afrikaans as official languages. This resembles the language policy of Nigeria and India for example.

If we accept that particular population groups are concentrated in specific regions, as shown in the language map on Dominant Home Language per district, one possible answer to South Africa's constitutional questions may be to recognize these language districts as administrative regions. Recognition of different groups could then take place through decentralization and the devolution of power to regional and local authorities. In this way maximum self-determination could be achieved at regional and local level (cf. Van Vuuren, Wiehahn, Rhoodie & Wiechers, 1991 p. 658).

However, the topic of regionalism is so politicized at this stage of the negotiation process in South Africa that the complexities of the matter should be kept in mind when any specific proposal is considered.

3. THE DEBATE ON REGIONALISM IN SOUTH AFRICA

The issue of regions in a post-apartheid South Africa is so sensitive that it was one of the reasons for a deadlock a few months ago between the major parties at CODESA (cf. Humphries & Schubane, 1992).

For the purpose of our discussion, three important publications on regionalism appeared since June of this year in South Africa. The first is Humphries and Shubane's analysis of the debate between and the positions of, the major role players in the issue of regionalism. Secondly, the research publication of Bertus de Villiers on Regional Government in the new South Africa refers to case studies of India and Nigeria, and then proposes guidelines for regional government in South Africa. The third publication is actually a political brochure, but it claims to be based on thorough research. This is the booklet by Koos Reyneke on a proposed region for Afrikaners that could fit into a map of ethnically based regions for the other major groups in the country. Some of the salient points on the accommodation of cultural groups in South Africa according to these three recent publications will now be briefly highlighted.

Humphries and Shubane of the Centre for Policy Studies in Johannesburg, maintain in their research report on Reconstructing regionalism in South Africa, that the issue may no longer be whether regional authorities are to play a role in the new South Africa - the question is what form these authorities will take and what power they will enjoy. The different parties at CODESA agree that there should be elected regional governments.

Widely divergent views are held concerning the powers of future regional governments in South Africa. The idea of strong regional government is supported not only by the governing National Party (NP), but also by many liberal opponents of the old apartheid regime. A strong regional government is seen by them as an essential check on the power of the central government. It could also be a way of ensuring diversity. According to the NP's constitutional guidelines of 1991, regional governments are an important element of "self-determination". This "self-determination" implies that particular groups are concentrated in specific regions. Strong regional government would therefore confer powers on these groups (Humphries and Shubane, p. 3).

The ANC has a different view of the power of regional government. They regard a strong regional government as a potential infringement on majority rule and on the ability of the central government to redistribute power and wealth (Humphries and Shubane, p. 1). In the ANC's Policy guidelines for a democratic South Africa (May 1992) the following is stated regarding the power of regional and central government: "*In essence regional government would have to function broadly within the framework of national policy. Regional government should not be able to contradict national policy as expressed in the laws of the country, but should influence the shaping of these policies and play a significant role in developing mechanism for implementation.*"

One of the central problems about a future regional despensation in South Africa is the question of regional boundaries. This question has thus far been under-researched and debated, according to Humphries and Shubane. According to the NP's constitutional proposals, the nine development regions of the country are suggested as a point of departure towards a new regional dispensation. For a map of the nine development regions, see Figure 2.

The advantage of choosing the development regions as point of departure is that they are, as Humphries and Shubane also stress, in a sense "neutral": "they are derived from technical planning criteria rather than a history which its bargaining partners may not wish to recognise" (Humphries and Schubane, p. 16). The ANC also uses the development regions as a starting point, but suggests a number of minor boundary changes and one significant bigger change, namely that a tenth region, as a consolidated Xhosa region, is added.

By including a Xhosa region, the ANC with its large Xhosa constituancy indicates, albeit indirectly, how important culture and language are in deciding upon regional boundaries. Humphries and Shubane draw attention to the fact that the Zulu and Tswana ethnic groups are also in favour of regional boundaries which "either reflect or extend current ethnically-drawn boundaries". The three groups in favour of ethnic regions, the Xhosa, Tswana and Zulu, are the three largest black ethnic groups in the country (Humphries and Shubane, pp. 9-10).

One facet of the larger debate on regionalism in South Africa which is not included in the research publication of Humphries and Shubane, is the campaign for a nation-state for the Afrikaner people during the last decade or two. The Conservative Party (CP) is the political home of several different proposers of regions that could serve as an ethnic homeland for (white) Afrikaans-speaking people.

As a matter of principle, the CP did not take part in the negotiation process in CODESA, where the topic of regionalism is attended to by other key political roleplayers. The CP nevertheless carries on with its planning and scheming for a separate Afrikaner nation-state, as described by Koos Reyneke in his brochure of June this year (Reyneke, 1992). A new development is that the CP has a serious split in leadership on this issue.

In his publication, Reyneke explains that the Afrikaner's aspirations towards an own nation-state is comparable to the strive for independence of other nation-states like Lithuania, Georgia, Croatia, Slovenia, etc. (Reyneke, p. 7). Not only does Reyneke make proposals about the borders of an Afrikaner region, he also has suggestions of how this region should fit into a South Africa subdivided into ethno-cultural regions (cf. his map, "Boere-Afrikanerland" in regional context, figure 3). He claims that his map is partially based on the language map already referred to, the one on Dominant Home Language per district in South Africa, Figure 1.

One of the more serious potential political problems with Afrikaner-homeland maps like the one of Reyneke, is that they tend to exclude the Afrikaans-speaking so-called "coloureds" as a group. Thus the old stigma of racism and apartheid-thinking could jeopardise the using of home language distribution as a possible criterion for regional planning.

In his publication with the title Regional Government in the new South Africa, De Villiers refers to a necessary basis of common characteristics in a region, "be it economic, cultural, linguistic or any other factor promoting a sense of community" (De Villiers, 1992 p. 74). Further on he stresses that an overemphasis on homogeneity can be disastrous. He maintains that various factors, and a balance between them, should be considered in the demarcation of regions, for instance the composition and density of the population, historical divisions, infrastructure and natural resources in the region, traditional governmental systems and the expected future economic development of an area. Seen against the background of this holistic approach of De Villiers, dominant language districts could indeed be a starting point to demarcate regions, as long as the other factors that he mentions are also considered.

4. CONCLUSION

In the final instance, the determination of regions and the establishing of their boundaries will be the outcome of a political process, negotiations and nuanced planning. Seeing that cultural diversity is so typical of South Africa, the map-drawers for a future regional dispensation will probably have to take into account factors like the strength of nationalistic group-consciousness among different cultural groups and the extent of an existing regional society's sense of independance. For this, more than wisdom will be needed. Furthermore, South Africa can, at this crucial stage of its history, also benefit from taking note of how Europe and different countries in it, manage to effectively accommodate cultural diversity.

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Table 1: Census Data*(1980) on Home Language in the RSA (Based on a 5% Sample of the Total Population)

Language	Whites	Coloureds	Indians	Blacks	Total
1 Official languages					
Afrikaans	2 581 080	2 251 860	15 500	77 320	4 925 760
English	1 763 220	324 360	698 940	29 120	2 815 640
					7 741 400
2 Other European languages					
Dutch	11 740	-	-	-	11 740
German	40 240	-	-	-	40 240
Greek	16 780	-	-	-	16 780
Italian	16 600	-	-	-	16 600
Portuguese	57 080	-	-	-	57 080
French	6 340	-	-	-	6 340
					148 780
3 Oriental languages					
Tamil	-	-	24 720	-	24 720
Hindi	-	-	25 900	-	25 900
Telegu	-	-	4 000	-	4 000
Gudjarati	-	-	25 120	-	25 120
Urdu	-	-	13 280	-	13 280
Chinese	-	-	2 700	-	2 700
					95 720
4.	African languages » Grand total 16 777 322				
4.1 Nguni languages					
Xhosa	-	8 440	-	2 870 920	2 879 360
Zulu	-	5 580	-	6 058 900	6 064 480
Swazi	-	1 060	-	649 540	650 600
South Ndebele	-	440	-	289 220	289 660
North Ndebele	-	100	-	170 120	170 220
					10 054 322
4.2 Sotho/Tswana					
North Sotho	-	2 440	-	2 429 180	2 431 620
South Sotho	-	5 320	-	1 872 520	1 877 840
Tswana	-	9 300	-	1 346 360	1 355 660
					5 665 120
4.3 Tsonga	-	1 180	-	886 960	888 140
4.4 Venda	-	40	-	169 700	169 740
Other	35 020	2 660	11 160	73 900	122 740
Total	4 528 100	2 612 780	821 320	16 923 760	24 886 020

* 1991 Census figures not available yet

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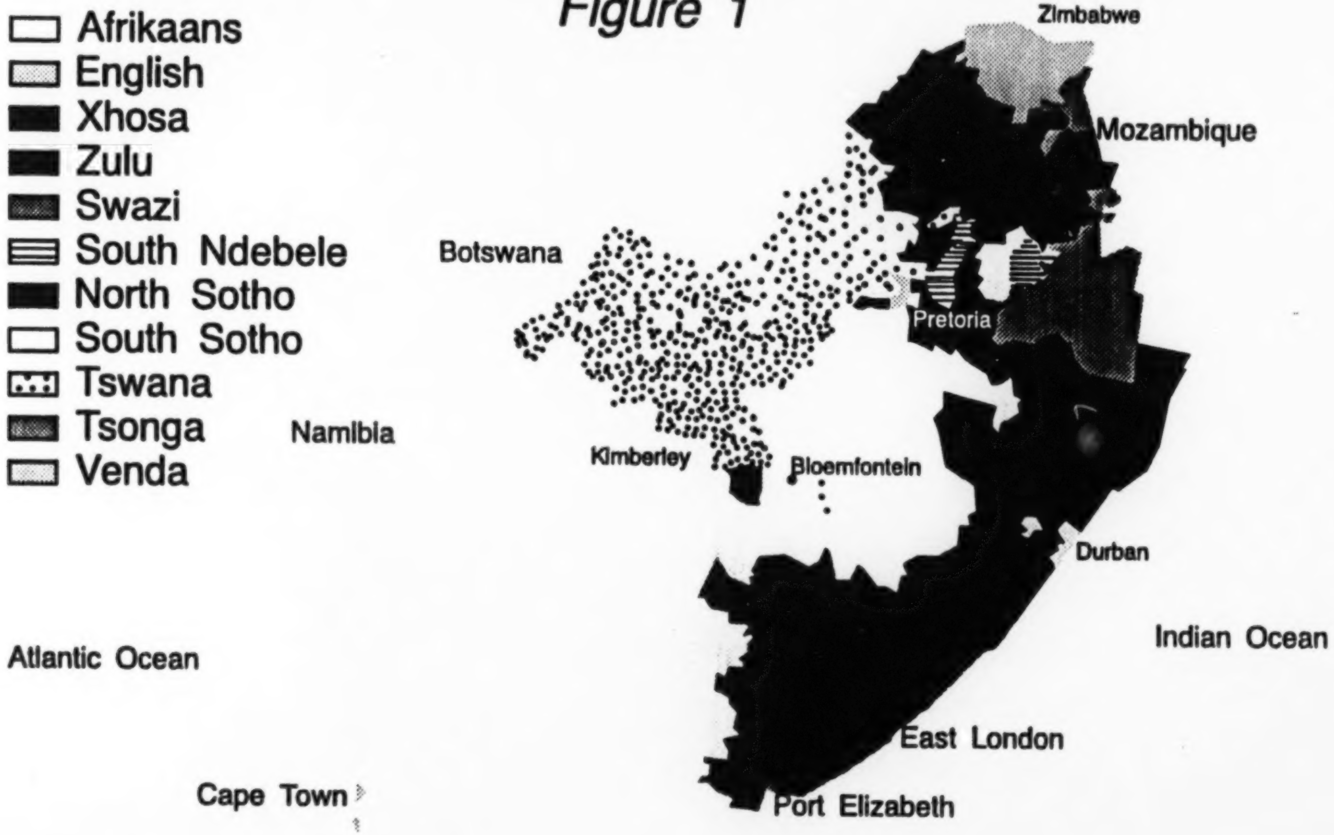
DOMINANT HOME LANGUAGE PER DISTRICT IN SOUTH AFRICA, 1980

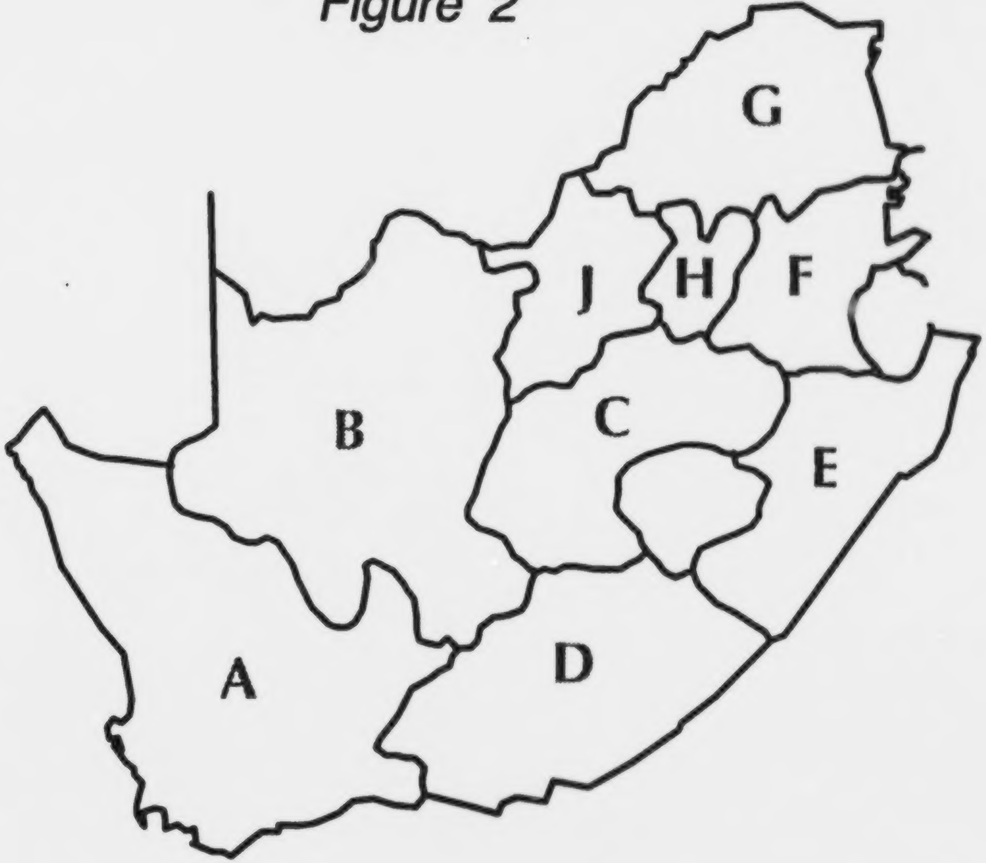
Figure 1


▭ Afrikaans
▨ English
■ Xhosa
■ Zulu
▨ Swazi
▤ South Ndebele
■ North Sotho
▭ South Sotho
⁘ Tswana
▨ Tsonga
▨ Venda
Zimbabwe
Mozambique
Botswana
Namibia
Pretoria
Kimberley
Bloemfontein
Durban
Indian Ocean
Atlantic Ocean
East London
Cape Town
Port Elizabeth

BEST COPY AVAILABLE

EXISTING REGIONAL DEVELOPMENT BOUNDARIES

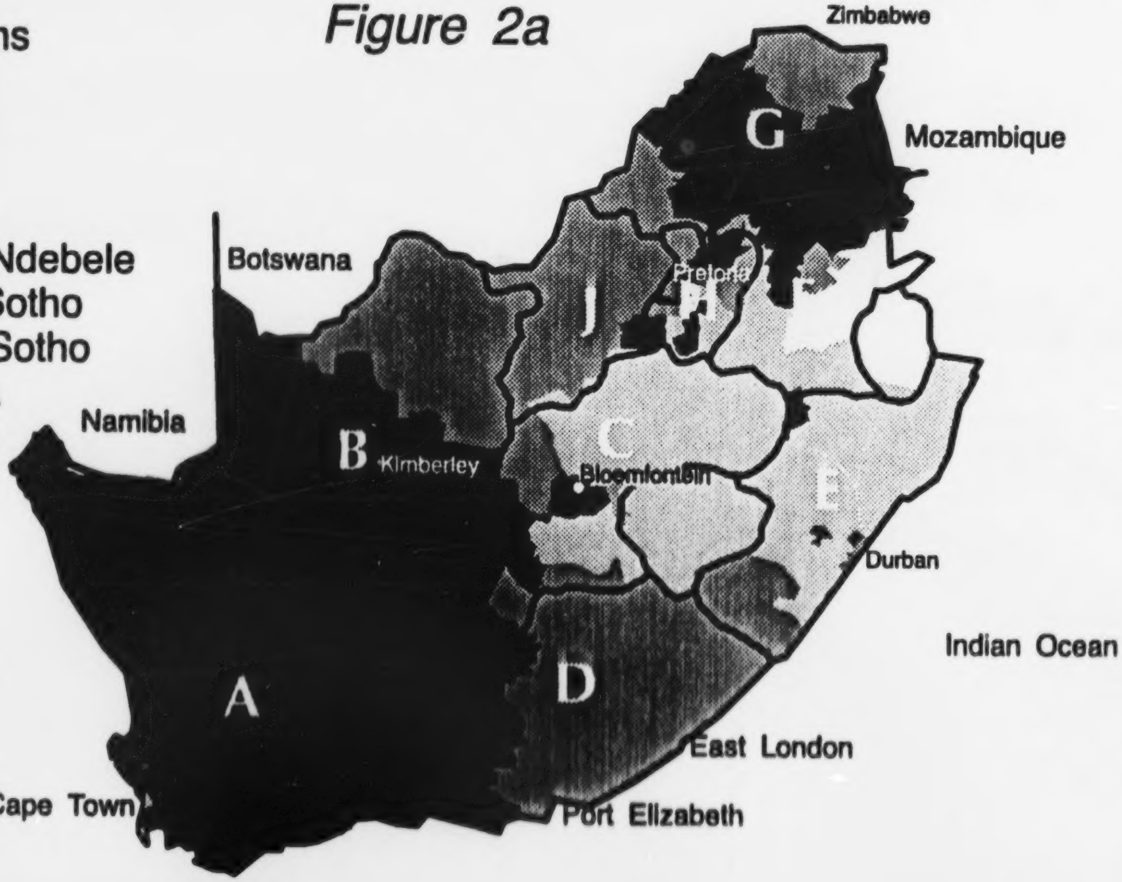
Figure 2



EXISTING REGIONAL DEVELOPMENT BOUNDARIES (1992) SUPERIMPOSED ON DOMINANT HOME LANGUAGE REGIONS (1980)

Figure 2a

- ■ Afrikaans
- ▨ English
- ▨ Xhosa
- ☐ Zulu
- ☐ Swazi
- ▨ South Ndebele
- ■ North Sotho
- ☐ South Sotho
- ▨ Tswana
- ■ Tsonga
- ▨ Venda


Zimbabwe
Mozambique
G
Botswana
Pretoria
H
J
Namibia
B
Kimberley
C
Bloemfontein
E
Durban
Indian Ocean
Atlantic Ocean
A
D
East London
Cape Town
Port Elizabeth

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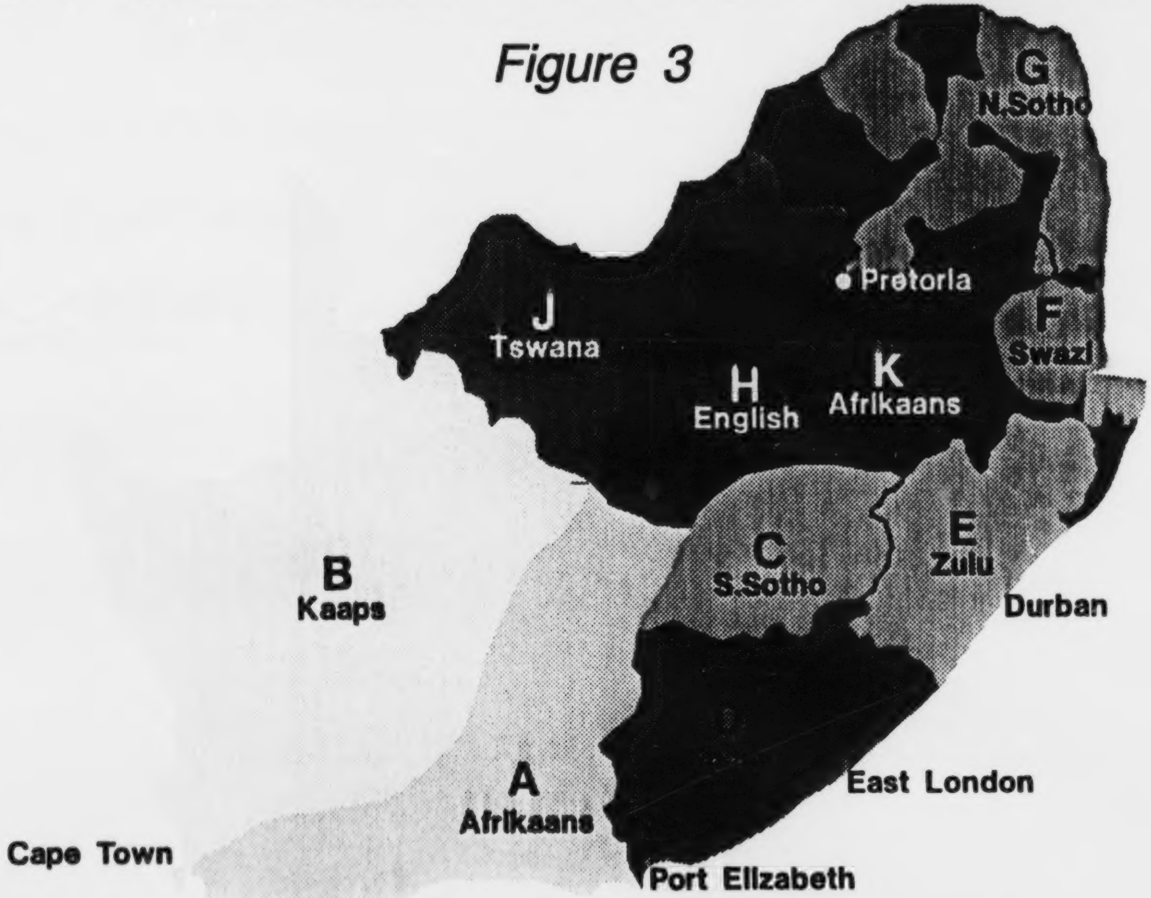
"BOERE-AFRIKANERLAND" IN REGIONAL CONTEXT: K. REYNEKE

Figure 3


G
N.Sotho
Pretoria
F
Swazi
J
Tswana
H
English
K
Afrikaans
B
Kaaps
C
S.Sotho
E
Zulu
Durban
East London
A
Afrikaans
Cape Town
Port Elizabeth

CONCLUSION

Colin H Williams

In tandem with other publications (Breton, 1991; Williams, 1991) these papers have sought to advance the conceptual and methodological development of geolinguistics. The E.C.E.C.'s next projects will be to examine the potential of adapting G.I.S. principles and practices to ethno-linguistic issues; to advance the study of toponymical forms; and to provide as accurate as possible cartographic information on conflict situations in Europe. Colleagues in Africa, particularly South Africa, will be proccupied with the question of linguistic regionalism in a post-apartheid republic. Critical to the peaceful transition to majority rule will be the manner in which existing formal units of government and administration can be adapted or replaced by others which satisfy the legitimate aspirations of all the New Republic's citizens. Detailed evaluation of both the personality and territoriality principles of language planning (Nelde et al, 1992) will be essential to guarantee both individual rights and group identity. Closer to home the 'new Europe' faces a host of problems in representing the interests of its constituent citiizens and there is little expectations that questions of either ethnic conflict or of linguistic pluralism are likely to diminish. Thus within the 'New World Order' (Williams, 1993) it is imperative that we both educate and inform the general public and politicians alike that territory and place are not irrelevant considerations, made redundant by the end of Geography in a shifting world. Quite the opposite, for in an increasing inter-dependent and competitive world system it is vital to understand and interpret the connectedness of space and of places. The difficulty, of course, is when the residents of shared space may have diametrically opposed views as to what constitutes the basis of such sharing. In such situations all that a map can do is to reflect a set of partial, perceived realities.

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Williams, C H (ed), 1991	Linguistic Minorities, Society and Territory. Multilingual Matters, Clevedon
Williams, C H (ed), 1993	The Political Geography of the New World Order, Belhaven, London.

EUROPEAN CENTRE FOR ETHNOLINGUISTIC CARTOGRAPHY
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Lenoirstraat, 13 - 1090 Brussel - tel. 02/428 56 14 - fax. 02/241 04 52

The European Centre for Ethnolinguistic Cartography was founded in 1985 by geographers, cartographers and language-planners from eight European countries. It is currently registered as an International Scientific Association under the Belgian law of 25 October 1919.

The aim of the centre is to promote, undertake or commission studies and research as well as consultation in areas related to the geography of ethnic groups and languages in Europe, with the specific aim of furthering the conception, realisation and publication of maps and atlasses in this field.

It is named after Professor Dr Aldo Dami

Aldo Dami (23-3-1898 + 9-10-1977)

Studied at the University of Geneva

Taught French in Budapest, Szeged and Leipzig.

Expert advisor to the Peace Conference of 1946.

Professor of ethnic and linguistic geography at the University of Geneva from 1946 till 1968.

President of the Société de Géographie de Genève.

Author of a linguistic map of Europe for the Bureau of Current Affairs in London and of the "Atlas des frontières Européenes de 1900 à 1975".

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